AQAS

AGENTUR FÜR
QUALITÄTSSICHERUNG DURCH
AKKREDITIERUNG VON
STUDIENGÄNGEN E.V.

FINAL REPORT

UNIVERSITY OF RWANDA

CLUSTER ACE SCIENCE

BIOLOGY EDUCATION (MASTER OF EDUCATION)

BIOLOGY EDUCATION (DOCTOR OF PHILOSOPHY)

MATHEMATICS EDUCATION (MASTER OF EDUCATION)

MATHEMATICS EDUCATION (DOCTOR OF PHILOSOPHY)

PHYSICS EDUCATION (MASTER OF EDUCATION)

PHYSICS EDUCATION (DOCTOR OF PHILOSOPHY)

CHEMISTRY EDUCATION (MASTER OF EDUCATION)

CHEMISTRY EDUCATION (DOCTOR OF PHILOSOPHY)

December 2025

Content

DECISION OF THE AQAS STANDING COMMISSION

ON THE STUDY PROGRAMMES

- **BIOLOGY EDUCATION (MASTER OF EDUCATION)**
- **BIOLOGY EDUCATION (DOCTOR OF PHILOSOPHY)**
- **MATHEMATICS EDUCATION (MASTER OF EDUCATION)**
- **MATHEMATICS EDUCATION (DOCTOR OF PHILOSOPHY)**
- **PHYSICS EDUCATION (MASTER OF EDUCATION)**
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- **CHEMISTRY EDUCATION (MASTER OF EDUCATION)**
- **CHEMISTRY EDUCATION (DOCTOR OF PHILOSOPHY)**

OFFERED BY UNIVERSITY OF RWANDA

Based on the report of the expert panel, and the discussions of the AQAS Standing Commission in its 27th meeting on 1 December 2025, the AQAS Standing Commission decides:

1. The study programmes "**Biology Education**" (**Master of Education**), "**Biology Education**" (**Doctor of Philosophy**), "**Mathematics Education**" (**Master of Education**), "**Mathematics Education**" (**Doctor of Philosophy**), "**Physics Education**" (**Master of Education**), "**Physics Education**" (**Doctor of Philosophy**), "**Chemistry Education**" (**Master of Education**), and "**Chemistry Education**" (**Doctor of Philosophy**) offered by **University of Rwanda**, **Rwanda** are accredited according to the AQAS Criteria for Programme Accreditation (Bachelor/Master) and the AQAS Criteria for Doctoral Programme Accreditation (PhD).

   The accreditations are 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 December 2026**. The confirmation of the conditions might include a physical site visit within the time period of twelve months.

3. The accreditation is given for the period of **six years** and is valid until **31 December 2031**, provided that the conditions listed below are fully met. Otherwise, the accreditation may be withdrawn.

Conditions:

1. The module descriptions have to be specified:

   a. There needs to be a curriculum alignment regarding the ILOs, content areas, teaching and learning strategies and assessment strategies for each module.

   b. The literature suggestions for each module have to be updated.

2. Evidence regarding a proper Documentation Centre has to be submitted. Furthermore, how information from alumni and other stakeholders are incorporated in reviewing curricula should be more detailed.
3. UR has to provide more details on a university workload policy to monitor the workload of the teaching staff.
4. UR has to provide evidence that trial runs prior to the actual practicals are being conducted and also recorded.

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

1. The university should consider the inclusion of non-credit modules to deal with the changing needs of the society and the global trends in the education sector.
2. The university should define how a part-time study can be absolved by its students. UR should develop a study learning plan for this programme that addresses the part-time students' needs.
3. UR should provide further evidence in respond to the finding regarding specially designed didactic modules.
4. A recognition of Prior Learning Policy should be developed.
5. An issue of diploma to those students who have not completed the whole programme but have completed a substantial part of it as an exit point should be considered. These should be clearly detailed in the programme handbook.

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

EXPERTS' REPORT

ON THE STUDY PROGRAMMES

- **BIOLOGY EDUCATION (MASTER OF EDUCATION)**
- **BIOLOGY EDUCATION (DOCTOR OF PHILOSOPHY)**
- **MATHEMATICS EDUCATION (MASTER OF EDUCATION)**
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- **CHEMISTRY EDUCATION (DOCTOR OF PHILOSOPHY)**

OFFERED BY UNIVERSITY OF RWANDA

Visit to the university: 09 – 11 May 2022, written evaluation in August 2025

Panel of experts:

Panel of experts in 2022 and 2025

Prof. Dr. Hemant Bessoondyal	Mauritius Institute of Education, Department of Mathematics (Mauritius)
Prof. Dr. Meshack Amos Obonyo	Egerton University, Department of Chemistry (Kenya)
Prof. Dr. Susanne Heinicke	University of Munster, Faculty of Natural Sciences, Department of Physics (Germany)

Panel of experts in 2022

Alexander Kirmse	Head of German International School, Cape Town (South Africa) (labour market representative)
Daniel Burkhardt	University of Freiburg (Germany) (student representative)

Coordinators:

Doris Herrmann	AQAS Head Office, Cologne, Germany
Annette Büning	

- **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 the 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 limited to specific academic disciplines or degrees nor to a certain type of higher education institution.

- **Accreditation procedure**

This report results from the external review of the degree programmes “Biology Education” (Master of Education), “Research in Biology Education” (Dr. phil.), “Mathematics Education” (Master of Education), “Research in Mathematics Education” (Dr. phil.), “Physics Education” (Master of Education), “Research in Physics Education” (Dr. phil.), “Chemistry Education” (Master of Education), and “Research in Chemistry Education” (Dr. phil.) offered by the University of Rwanda.

- **Criteria**

Each programme is assessed against a set of criteria for accreditation developed by AQAS: the AQAS Criteria for Programme Accreditation (Bachelor/Master) and the AQAS Criteria for Doctoral Programme Accreditation (PhD). 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 each programme since not all indicators necessarily can be applied to every programme.

- **Approach and methodology**

Initialisation

The university mandated AQAS to perform the accreditation procedure in April 2021. The university produced a Self-Evaluation Report (SER). In May 2021, the institution handed in a draft of the SER together with the relevant documentation on the programmes and an appendix as well as, in case of a reaccreditation, statistical data on the programmes. The application included e.g.:

- an overview over statistical data of the student body (e.g., number of applications, beginners, students, graduates, student dropouts),
- the CVs of the teaching staff/supervisors,
- information on student services,
- core information on the main library,
- as well as academic regulations.

AQAS checked the SER regarding completeness, comprehensibility, and transparency. The accreditation procedure was officially initialised by a decision of the AQAS Standing Commission on 30 August 2021. The final version of the SER was handed in November 2021.

Nomination of the expert panel

The composition of the panel of experts follows the stakeholder principle. Consequently, representatives from the respective disciplines, the labour market, and students are involved. Furthermore, AQAS follows the principles for the selection of experts defined by the European Consortium for Accreditation (ECA). The Standing Commission nominated the aforementioned panel of experts in March 2022. AQAS informed the university about the members of the expert panel and the university did not raise any concerns about the composition of the panel.

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 all panel members in order to increase transparency in the process and the upcoming discussions during the site visit.

Site visit

After a review of the SER, a site visit to the university took place on 09 – 11 May 2022. On site, the experts interviewed different stakeholders, e.g., the management of the higher education institution, the programme management, teaching staff, as well as students and graduates, in separate discussion rounds 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.

Reporting

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

Postponement of decision

The report, together with the comments of the department, forms the basis for the AQAS Standing Commission to take a decision regarding the accreditation of the programmes. Based on these two documents, the AQAS Standing Commission took its decision on the accreditation on 23 August 2022. AQAS forwarded the decision to the university. The university had the right to appeal against the decision or any of the imposed findings.

The AQAS Commission decided to give the programme additional 18 months for the further enhancement of the quality of the programme. The deadline for the submission of the revised documents was 30 June 2024.

Reconsideration

The university submitted further evidence in June 2024, and thus, in the given timeframe, for the reconsideration process. The documents were forwarded to the relevant key stakeholder in the experts' panel. The expert drafted this follow-up report on the consideration, assessing the fulfilment of the AQAS Criteria. The report includes a short description of the situation when the programmes were assessed firstly, the evaluation by the expert panel which formed the basis for decision taking in 2022, the assessment of the situation on the basis of the additional documents provided in 2024 and a recommendation to the AQAS Standing Commission.

Decision

The report, together with the comments of the university, forms the basis for the AQAS Standing Commission to take a decision regarding the accreditation of the programmes. Based on these two documents, the AQAS Standing Commission took its decision on the accreditation on 01 December 2025. AQAS forwarded the decision to the university. The university had the right to appeal against the decision or any of the imposed conditions.

In January 2026, AQAS published the report and the result of the accreditation as well as the names of the panel of experts.

- **General information on the university**

The Government of Rwanda established the University of Rwanda (UR). It resulted from merging the nation's seven public Higher Learning Institutions into a consolidated entity governed by staff and student representation. UR's entities include the College of Arts and Social Sciences (CASS); the College of Agriculture, Animal Sciences and Veterinary Medicine (CAVM); the College of Business and Economics (CBE); the College of Education (CE); the College of Science and Technology (CST) and the College of Medicine and Health Sciences (CMHS). The highest governing and decision-making organ of the University of Rwanda is the Board of Governors, composed of eminent individuals from academia, and public and private sectors appointed by a Presidential Order.

The academic governance structure of the University of Rwanda includes the University Academic Senate, the leading academic decision-making organ chaired by the Vice-Chancellor, which approves academic programs, rules and regulations and student graduation lists. The College Academic Council, composed of the Principal (chair), Deans, Heads of Departments and Directors of academic units, is the primary academic decision-making organ in each College and approves new academic programs before submission to the Senate.

UR total students' enrolment as per the academic year 2019/2020 was 25,081, including 36% females and 64% males. Undergraduate enrolment represents 92% against 8% for postgraduate programmes. Government-sponsored students represent 84% of all registered students. The distribution of academic staff for 2019/2020 shows that Assistant Lectures dominate with 45%, and Senior Lecturers and Professors represent 13%. Permanent and full-time are 89%, and 11% are under contract.

The University of Rwanda offers 67 undergraduate and 51 postgraduate programmes distributed among the 6 Colleges. Nine Centres and Institutes are dedicated primarily to research, and 78 laboratories support research and training, ranging from biological sciences, ICT and engineering to GIS.

The African Centre of Excellence for Innovative Teaching and Learning Mathematics and Science (ACEITLMS) is equivalent to a School as per UR structure. The core aim of the ACEITLMS, based at UR-CE, Rukara Campus, is to strengthen human capacity in the delivery of quality teaching and learning of mathematics and science in Rwanda and across the region, in partnership with regional and international higher learning institutions through the three main activities namely (i) teaching and learning, (ii) research and training, and (iii) community engagement.

ACEITLMS runs eight postgraduate programmes (four Master's and four PhD programmes). All these programmes have been nationally accredited by the Rwanda Higher Education Council (HEC).

- **Assessment of the study programmes**

1. Quality of the curriculum / Aims and structure of the doctoral programme

Master 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 achievement of the intended learning outcomes.

The academic level of graduates corresponds to the requirements of the appropriate level of the European Qualifications Framework.

The curriculum's design is readily available and transparently formulated.

[ESG 1.2]

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.

[ESG 1.2]

Description

1.1 Master Programmes

The four Master's programmes run by ACEITLMS were developed following the National Qualifications Framework of Rwanda Higher Education Council (HEC) and received national accreditation in 2018. The programmes intend to solve the existing challenges of educational researchers and educators in the area of STEM education in Rwanda and the African region regarding capacity building to advance research skills and professionalism in teaching and research. According to the university, the main aim of these programmes is to train a cadre of discipline-based educational researchers firmly grounded within the scientific and mathematics disciplines. As the university states, they attribute, particularly general transferable soft skills, such as global citizenship, lifelong learning, collaboration, teamwork and leadership, creativity and innovation, and ethical, social, and professional understanding, make the PhD students suitable for employment at different potential hiring organizations.

Furthermore, the programmes align with the macro plan of growth of the University of Rwanda in general and the College of Education in particular.

These programmes are aligned with the UR undergraduate programmes. The programmes should allow many of the College graduates to strengthen and upgrade knowledge in their respective areas of specialization but also get appropriate skills that enable them to design, conduct and present findings from research in either science or mathematics education that should help not only the Rwanda education sector but also the African region.

According to the University of Rwanda, the following are the common specific characteristics of the four Master's programmes:

The programmes have in common six education modules explicitly designed for mathematics and science educators. All education modules were designed mainly to equip the educators with research and critical analysis skills, enabling them to research current trends and challenges in mathematics and science teaching and curriculum development.

They also have subject-based module content to reinforce concepts and principles of the specific science subjects and equip educators with strong science (biology, chemistry, physics) and mathematics knowledge and practical skills enabling problem-solving, innovation and creativity and developing of values specific to science. The science subject content provides the context in which the acquired pedagogical knowledge can be applied.

For all the modules, there is an intensive and effective use of ICT and innovative pedagogical methods in delivery and assessment.

The university states that all modules for the four programs are uploaded to Moodle, UR's e-learning management system, while courses and other learning resource materials can be accessed online.

To complete the programme, candidates accumulate 240 credits comprising seventy (70) credits of Research and Educational modules, fifty (50) credits in each area of specialization as either Biology education, Chemistry education, Physics education or Mathematics education, and a one hundred twenty (120) credits dissertation as summarized in the following table:

The standard structure for all Master of Education programmes (70 credits):

A standard structure for all Master of Education programmes has two semesters: the first semester consists of three modules in (i) Research Methods in Education, (ii) Statistics Applied to Research in Education, and (iii) Measurements and Evaluation in Mathematics/Science. Besides, the second semester also consists of three modules in

1. Design and development of mathematics/science curriculum,
2. Integration of ICT in Mathematics/Science Teaching and learning, and
3. Trends and Issues in Mathematics/Science Education.

The standard structure of all Master specific course programmes has a four-semester schedule. Programme specific courses (50 credits + 120 credits dissertation).

The **Master's Biology Education Programme** has a schedule lasting four semesters: the first semester consists of two modules in (i) Biostatistics and (ii) Systematics and Economic Botany. The second semester also consists of two modules in (i) Animal Systematic and Conservation and (ii) Molecular Genetics, while the third and fourth semesters prepare the Dissertation.

The **Master's Chemistry Education Programme** has a schedule lasting four semesters: the first semester consists of two modules in (i) Advanced inorganic chemistry and (ii) Modern methods of Chemical Analysis. The second semester also consists of two modules in (i) Industrial and Environmental Chemistry and (ii) Applied Organic Chemistry, while the third and fourth semester is for preparing the Dissertation.

The **Master's Mathematics Education Programme** has a schedule lasting four semesters: the first semester consists of two modules in (i) Applied Statistics and Probability in Education and (ii) Advanced Algebraic Structures. The second semester also consists of two modules in (i) Riemannian and Symplectic geometries and (ii) Selected topics of mathematics analysis, while the third and fourth semester is for preparing the Dissertation.

The **Master's Physics Education Programme** has a schedule lasting four semesters: the first semester consists of two modules in (i) Advanced Mechanics and (ii) Advanced Electromagnetism. The second semester also consists of two modules in (i) Mathematical and Computational Methods for Physics and (ii) Quantum Physics, while the third and fourth semester is for preparing the Dissertation.

Experts' evaluation

a) Evaluation in 2022

Common aspects of all four programmes

The panel of experts has a positive impression of the "Vision and Mission" of the ACE and fully supports it. The Vision and Mission statement is shared between the staff members, which is crucial for further development. The core ideas of the programmes are relevant in the national and regional context, and the human resources development in Science Education is vital for the country's development. However, progress in this direction is further needed.

The four programmes are entirely content-driven, and it would be essential to align the programmes even stronger with the needs of the labour market – without giving up academic standards. The programmes are modular in structure and achieve the specified intended learning outcomes. The scientific part of the programmes is adequate and in parts above the level required of graduates in their future practical teaching work. Although the labour market representatives appreciate that the students and graduates of ACEITLMS fulfil their needs at national schools, the panel of experts – due to its international background – comes to a slightly different conclusion. The experts see in parts a too rudimentary link, e.g. concerning the practical/experimental implementation and the required/existing infrastructural conditions at the schools (laboratory and experimentation facilities, access to virtual experiments, supply of consumables, or alike). In order to educate future teachers' trainers and educators concerning science teaching at school, more practical elements and training should still be implemented in the curriculum. To fulfil the needs of the labour market even better, the panel of experts recommends ensuring adequate subject-specific training concerning the level of school science **(**old Finding 1).

Many challenges of science and education are not characterized by pure discipline-related problems but by interdisciplinary questions. Therefore, the panel of experts misses interdisciplinary elements, which would lend themselves to networking between mathematics and the natural sciences and the natural science subjects of physics, biology and chemistry. Moreover, the experts could not verify specific subject didactic modules, or only to a limited extent. Therefore, the panel of experts recommend that issues of science education play a more central role both in teaching as well as in examination. (old Finding 2)

During the discussions with the programmes' representatives, the panel of experts also raised the question of to what extent the intended learning outcomes reflect both academic and labour market requirements. The panel has no general concerns that the intended degrees consider scientific and labour market requirements. This especially holds for the academic and scientific training where the programmes meet international standards adequately and form a balanced course-based curriculum. Thus, the panel is convinced that the programmes generally reflect the labour market requirements for teachers' educators and future lecturers for higher scientific and educational research content.

It has to be said that the feedback from the labour market in the discussions with the panel members was generally very positive. A need for improvement was identified in the pedagogical skills of the graduates – which is to be expected for those who enter the labour market at school after studies to become a teacher but needs to be addressed for the group of graduates who do not decide to work at schools but at universities and who are supposed to lecture students and/or consult teachers after finishing the Master's degree. ACEITLMS should implement more training on pedagogical skills in the curriculum (old Finding 3).

The experts have learned that the programmes follow a university-wide central quality assurance system based on an internal quality framework. The framework includes mechanisms from the implementation of new programmes to minor changes based on stakeholder feedback to major changes based on external reviews (see Chapter IV.2). Based on that fact, the experts strongly recommend that these existing instruments are fully used in the future. Until now, the programmes have a broad variety of intended learning outcomes on the programme level (between 22 for the Master's programme "Mathematics Education" and 37 for the Master's programme "Physics Education"). The experts believe that the ACEITLMS will struggle to impart and measure all the ILOs within the programme's time frame. For example, it stayed unclear to the experts how "Financial Literacy" (being marked as general transferrable skills) is assessed when looking at the module structure. Thus, the intended learning outcomes on the programme level must be steamed to essential components to reflect the core competencies acquired by graduates during the study programmes (old Finding 4). When doing, an alignment of the intended learning outcomes on the programme level for each programme must be done e.g., by using an aggregated intended learning outcome matrix. The experts believe that well written intended learning outcomes will provide structural support to students, external stakeholders without limiting

ACEITLMS' programmes. As a side effect, the profiles of the programmes will get internationally more comparable and will raise the visibility on the African continent.

The experts have analysed the course descriptions provided during the procedure and conclude that the number of listed intended learning outcomes on the course level have the same issue as the intended learning outcomes on the programme level (old Finding 5). Being typical on the international level, the intended learning outcomes on the course level have to be tested during the courses and especially in the final exam of the course. However, the ILOs on the course level for the ACEITLMS programme are formulated too broadly to be measurable within the given timeframe for one course. Despite that, the experts believe that content-wise the programmes' aims, and the curricula allow graduates to have meaningful careers. Thus, the experts believe that this is a documentation issue. In consequence, the experts conclude that the ACEITLMS must recompose the intended learning outcomes on the course level to a comparable and measurable level (old Finding 5a). The experts have also analysed the course descriptions for the courses concerning the course literature suggestion, and based on the discussion, the experts' panel concluded that the literature has to be checked concerning its up-to-date status (old Finding 5b). In a second step, the central unit should supervise the level and comparability of course descriptions in order to make sure that the programmes follow the same course description structure.

The curriculum does not include any elective courses. However, the experts understood that there are non-credit courses offered to students, but no guidelines are offered to students on how students can take these courses (old Finding 6). A further clarification should be provided on the nature of non-credit courses (old Finding 7).

The panel of experts also had to assess to what extent the academic degree corresponds to the learning outcomes and the requirements of the appropriate level of the European Qualifications Framework and the respective National Qualifications Framework. The panel concludes that the programmes on the Master's level at ACEITLMS, in general, appear well-balanced and, in international comparison, on an appropriate level. (International) Educational research is considered, which leads to adequate research work, as demonstrated in the presented Master's Theses, which were perused by the panel during the site visit. For further improvement, the inclusion of courses in academic writing already on the Master's level should be considered (old Finding 8).

When the panel members discussed how the curricular structure of the programmes supports the achievement of the intended learning outcomes and the learner's progression, it became evident that the structural orientation of the programmes supports the educational goals to be achieved and the intended (further) development of the students.

The subject-specific necessary curriculum contents are well covered overall. The emphasis, in some cases, appears to be placed on the specialisations/preferences of the lecturers (content follows the lecturer); it is organized less in the sense of a spiral curriculum or an intended networked curriculum structure (lecturer follows the content). Consequently, cross-curricular content is generally still insufficient and should be enhanced in the future. A structured, systematic inclusion of subject-related methodological elements could be fostered further if an established cross-curriculum (old Finding 9). The teaching of general academic skills is partly implemented in the curriculum. It could be further enhanced, e.g. regarding scientific research or the writing of academic papers, which is currently not curricularly anchored in the Master's programmes as mentioned above.

Since ACEITLMS is relatively newly founded, there has not been any formal curricular modification to these programmes. The experts asked during the site visit if there had been and what was the time frame for such review per UR policy, but the response was ambiguous. The programmes are still relatively new, mounted in 2018. Therefore, the panel of experts concludes that there should be other prerequisite measures and steps

taken before curricular modifications and changes. This may include identification of all stakeholders (government, employers, alumni, and current students), analysis and documentation of their needs, and specific requirements (see old Finding 16).

The programmes show some specific elements, but due to the pandemic situation in the past two years, there were challenges in realizing the specific elements, such as internships and in-person / distance teaching. The panel of experts cannot adequately review this aspect.

In principle, the practical/experimental part, especially in the fields of physics/chemistry/biology, and the laboratory times provided for this are not explicitly specified either in the overall scope or in the experiments/practicals to be carried out on a mandatory basis. The information on this, including laboratory times determined during the accreditation visit, varies from 20% to 50% of the overall study time. To improve the transparency for the students, ACEITLMS should clearly define and describe the practical/experimental parts of each programme's curriculum (old Finding 10).

The total programme workload is correctly and transparently allocated to the different courses/modules. The reported data concerning workload and credits all seem to be appropriately specified.

It is evident that the UR-CE is meeting the national goal “to solve the existing challenges of educational researchers and educators in the area of STEM education in Rwanda”. Nevertheless, international demands are more expansive in scope than this.

If the university's mission statement formulates its set targets, the panel of experts will measure the university on its own target. The statement has a phrase like this, “there is an intensive and effective use of ICT and innovative pedagogical methods in both the delivery and assessment of the modules”. However, apart from what is written in the modules, it was not possible to determine the actual work/the extent to which the learner is engaged.

b) Reconsideration evaluation in 2025

The experts’ panel appreciates the measures taken by the University of Rwanda to implement the findings regarding the curricula of the study programmes in the Cluster ACE Science.

Practical components have been integrated as claimed in the submissions. As for the alignment with labour market needs it is noted with satisfaction that a module entitled Industrial Attachment has been included which directly addresses industry requirements.

There has been a markable improvement regarding the integration of education science aspects. Appropriate concepts related to mathematics and science education have been included together with strategies dealing with teaching and learning of mathematics and science at classroom level with respect to contents as well as extent. The module on Industrial Attachment is interesting to enable students of the study programmes to relate to the requirements of the labour market.

Furthermore, pedagogical skills are catered for within each module in the study programmes.

The articulation of Learning Outcomes (LOs) appears to be an area where the URCE Team could benefit from targeted capacity building. To maximize impact and clarity, capacity building should focus on mastering the formulation of LOs that are measurable and framed in the language of competence. Enhancing the team's grasp of the core purpose of Learning Outcomes and the proper framing structure will significantly strengthen curriculum development. It is claimed that some learning outcomes for the programmes have been reviewed. In the long term the University should observe whether the measures are sufficient to reflect the core competencies at that level.

While agreeing that the learning outcomes follow guidelines by the Rwanda higher education council (HEC), related to a requirement for LO to include both generic competences and cross cutting issues, learning

outcomes need to be developed for a module taking into consideration the time alloted and should be attainable by the end of the module. There needs to be a curriculum alignment regarding the LOs, content areas, teaching and learning strategies and assessment strategies for each module. Capacity building is required here to focus on mastering the formulation of LOs that are directly linked to the training objectives of the programme. It has also been written that "*Prior to delivering the module, lecturers provide students with concise learning outcomes relevant to the course content*". Clarification on this statement is needed **(new finding 1a**).

As for updated literature for the modules, further evidence is needed. While literature for some study programmes has been updated (e.g. Biology Education), it remains old literature in other study programmes (e.g. Chemistry Education). (**new finding 1b**)

It is claimed that there is no provision for non-credit courses for Masters programmes. The university may consider this suggestion regarding inclusion of non-credit modules to deal with the changing needs of the society and the global trends in the education sector. (**new finding 2**)

The teaching of general academic skills is being dealt with within the Research Methodology module and further enhanced through a series of seminars on academic writing and data analysis methods.

There are guidelines now for teaching staff to enhance STEM cross curricular skills through mandatory STEM projects for students and in all study programmes. Projects based assessment that cater for STEM cross-curricular skills will be encouraged for the new programmes. This can be viewed as a progressive requirement for the programme moving into the future.

Lists of experiments to be performed are included in the module descriptions and the assessment value indicated. The courses are accompanied with a description of the practical/experiments to supplement the theoretical aspects of the course.

Conclusion

The criterion is partially fulfilled.

Programme specific aspects of Biology Education (Master of Education)

Experts' evaluation

a) Evaluation in 2022

The University of Rwanda has presented an impressive array of intended learning outcomes in the programme specification. These outcomes are related to the subjects selected for delivery and capture interdisciplinary elements, which are desirable to impart to learners. In general, the learning outcomes intend to measure/impart the following:

- Knowledge and Understanding of the subject matter,
- Application of knowledge gained includes using ICT to design Biology related learning,
- Communication/ICT and /Information literacy.

General Transferable Skills include Professional Autonomy, Employability, Global Citizenship, Lifelong learning, Collaboration, Teamwork and Leadership, Research, Creativity and Innovation, Professional Understanding, and Financial Literacy.

The intended learning outcomes represent a comprehensive collection of learning outcomes (37 in total) that the university would struggle to impart and measure within the programme's time frame. For example, the panel of experts wonder how financial literacy is assessed/measured under general transferrable skills by

looking at the modules as spelt out. Specifically, the specification states in Molecular genetics, “Financial Literacy: Having successfully completed this module, students should be able to recognize the economic importance of gene engineering in food and drug production”. Recognizing is not measurable and possibly not a financial issue. ACEITLMS should define this programme's intended learning outcomes into brief, very clear, measurable objectives (see old Finding 4).

However, the intended learning outcomes as presented do reflect the academic/scientific and labour market requirements. Additionally, the university is aware of the contribution to the labour market needs in producing personnel and high-level educators. However, the university did not have structured nor specific guidelines for obtaining feedback from the labour market (see below). The cohorts of graduates from this programme, coupled with the relatively short period the programme has been in existence (2018), will impede obtaining full information. Therefore, the university might experience challenges updating learning outcomes with current developments. The panel of experts recommend that the University of Rwanda develop mechanisms to conduct structured labour needs assessment/engagement/two-way feedback sessions and use this information to update the learning outcomes (see old Finding 16).

The degree Master of Biology Education programme corresponds to the region's expectation of such a programme, demonstrated by coursework and dissertation /project emanating from independent research work. The academic degree corresponds to the learning outcomes and the requirements of the appropriate level of the respective national qualification framework.

The programme specification for Master of Biology Education has provision to undertake via two modes of attendance: full-time or part-time. However, this is not defined in the curriculum design as to how a student in the part-time mode progresses and is loaded differently from the one on full-time. There is a universal principle that the method of delivery selected should not compromise the level of engagement and quality of the academic programme. The curriculum structure is well designed for producing educators who perform at higher levels. There is precise harmony in three out of the four significant areas of the learning outcomes. However, an overall glance at the curriculum gives the impression that it is heavily content-loaded and requires 1200 hours of workload. This nature of curriculum tends to favour full-time learners and not part-time ones. As was confessed by one of the learners, there could be those who are struggling to keep up with the rigors of the programme hence a delay in progression. This needs to be spelt out clearly, and the university should define how a part-time study can be absolved by its students. UR should develop a study learning plan for this programme that addresses the part-time students' needs (old Finding 11).

The panel of experts assesses that the Master in Biology Education curriculum is designed to produce Biology Educators/researchers and provide a pathway for academic progression for undergraduate students. For that reason, it is particular on the subject matter with six modules in Education, including ICT and 4 in General Biology. This leaves little room to cover cross-subject and general skills courses.

There are guidelines for curricular review spelt out in the Inter-University Council for East Africa Handbooks. There are beneficial resources that can be useful in implementing curricular reviews.

Regarding methodological areas that include practical sessions for the Master’s students, the curriculum does not explicitly disclose the breakdown of distribution between practical laboratory and class lectures in the Biology programme. Unfortunately, this question was not responded to with clarity at the site visit. The programme specification has a clear assignment of credits for each course and how the total credits are calculated. However, there are areas of each specific course module loading that are not transparently allocated. In addition, how these credits are segregated between practical and class lecture hours has not been explained (see above). In the course Molecular Genetics MEB6244, there are 48 Contact hours and 102 hours for independent study. However, the 48 contact hours are broken down into eight types of courses as follows: (a) Lectures b) Computer-and laboratory-based practical classes c) Discussion of relevant research articles d)

Fieldwork e) Workshops, and f) Presentations, g) Assignments and h) Research seminars. The practical component is described as follows: “Practical for Molecular Genetics: Extraction, purification, and manipulation of nucleic acids and proteins; Electrophoresis, Southern blot, Northern blot, Western blot; Designing PCR primers using computer-based methods; PCR amplification of DNA samples using primers and cleaning of products using PCR clean-up kits; Practicals for Bioinformatics: Compare sequences against the DNA databases on the web using a BLAST search; Align sequences using DNA Megalign and CLUSTAL, and perform phylogenetic analyses using PAUP. Repairing and inactivating pathogenic gene.”

The experts see that as another indicator for the imprecise intended learning outcomes but gives also indications concerning the resources (see Chapter IV.6.). Thus, a clear workload calculation has to be brought in plausible relation to the intended learning outcomes and the course content, including its practical elements (old Finding 12).

b) Reconsideration evaluation in 2025

It is claimed that some learning outcomes for the programmes have been reviewed. The articulation of Learning Outcomes (LOs) appears to be an area where the URCE Team could benefit from targeted capacity building. To maximize impact and clarity, capacity building should focus on mastering the formulation of LOs that are measurable and framed in the language of competence. Enhancing the team's grasp of the core purpose of Learning Outcomes and the proper framing structure will significantly strengthen curriculum development. In the long term the University should observe whether the measures are sufficient to reflect the core competencies at that level.

The university should define how a part-time study can be absolved by its students. UR should develop a study learning plan for this programme that addresses the part-time students' needs (**old and new finding 3**).

Course MEB9245 shows that there is a distribution of practical and theory class.

Though several documents have been developed for quality assurance purposes and some exemplars submitted, evidence regarding a proper Documentation Centre should be submitted. Furthermore, how information from alumni and other stakeholders are incorporated in reviewing curricula should be more detailed (**new finding 4**).

Conclusion

The criterion is fulfilled.

Programme specific aspects of Mathematics Education (Master of Education)

Experts’ evaluation

a) Evaluation in 2022

This Mathematics Education programme is 240 credits – 70 credits of Research and Educational modules, 50 credits in Mathematics education and 120 credits for the dissertation.

The Research and Education modules are:

- Research Methods in Education
- Statistics Applied to Research in Education
- Measurements and Evaluation in Mathematics
- Design and development of Mathematics curriculum
- Integration of ICT in Mathematics Teaching and learning

- Trends and Issues in Mathematics Education

The modules for the discipline are:

- Applied statistics and probability in education
- Advanced algebraic structures
- Riemannian and symplectic geometries
- Selected topics of mathematics analysis

As stated, the primary purpose of the programme is:

- To train specialists in the learning and teaching of Mathematics who can develop into learners a deeper understanding of Mathematics and appreciation of its contribution to current scientific developments;
- To train graduates with advanced specialised knowledge and critical skills which will enable them to become education professionals and leaders, potential teachers of mathematics at the undergraduate level and pursue PhD in the field of Mathematics Education;
- To develop researchers in Mathematics Education who can investigate life problems and contribute to developing knowledge in this field by equipping them with skills in designing, conducting, presenting and communicating research findings.

The Master's programme is implemented through the Teaching and Learning and Research Unit. All activities related to teaching, learning and research for Master's course work and research dissertation are coordinated by the Head of Teaching and Learning, who has the same academic qualification as the Head of Masters' studies. The teaching, research and supervisors for Master's programmes are UR-CE staff. In this regard, the teaching and learning unit works closely and collaborates with the UR-CE School of Education and, particularly, with academic staff from the department of Mathematics Education.

The panel of experts could see that the focus of this programme is to enhance the students' research capabilities and reinforce concepts and principles of some specific mathematics content areas. The programme also caters to developing competencies and skills like creativity, inquiry, critical thinking and analysis, presentation skills, cooperation and collaboration, as well as communication and teamwork spirit. ICT plays a fundamental role in the curriculum, teaching and learning, and assessment in this programme. The level at which the subject modules are pitched is commendable.

Various teaching and learning strategies are being adopted to ensure the active participation of students in their learning. Workshops, peer tutoring and seminars are in-built into the programme. A variety of assessment strategies for in-course and end-of-course tasks are adopted. The degree is awarded upon successfully completing the research project and a presentation of a dissertation of about 20,000 words. During the discussion with the students on the site visit, it was said that they value the support provided by the staff all along the programme and for the supervision of their research project. It was stated that support for academic writing is being provided within the Research Methods in Education through seminars and tutors. Students also valued the level of supporting their peers and the doctoral students provided. For those having to take a resit examination in the content module, extra tutorials are provided by the tutor to support them.

The staff's workload is relatively high as they must be involved in teaching and learning, research and outreach programmes. It was stated that the involvement of staff in teaching and learning decreases and that of research increases as they move up the rank in their professional career. There is a Workload Policy at the University of Rwanda with all the details.

Proper moderation of Examination booklets and Scripts is an integral part of quality assurance. However, the UR-CE has challenges finding experts for some of the highly specialised courses. Therefore, the exercise could be carried out but with deficiency. UR should implement a process to match the intended learning outcomes with the expertise of the teaching staff.

b) Reconsideration evaluation in 2025

No further evidence required. The experts already saw no need for short-term changes or additions in this area in the first evaluation of the programme. Therefore, there is nothing to add to the previous evaluation.

Conclusion

The criterion is fulfilled.

Programme specific aspects of Physics Education (Master of Education)

Experts' evaluation

a) Evaluation in 2022

The panel of experts considers the Master's study programme of UR in Physics Education to be very well founded and constructed convincingly especially concerning subject-related aspects. Certain routines of evaluation and assessment of the Master's study programme exist. It is recommended that those procedures are conducted regularly and documented to ensure quality, relevance and workload, significantly when numbers of graduates rise prospectively (see Chapter 2). This assessment should include students and other stakeholders in a closed feedback circle. This especially holds for the Master's programme to identify the labour market needs for graduates that are neither prospective teachers holding Bachelor-degrees nor PhD graduates aiming at positions as lecturers, supervisors or consultants. Likewise, the workload of the first year of the Master's programme should be continuously observed as it appears to constitute considerable coverage (see old Finding 12).

The panel of experts is well aware that the described curriculum is based on challenges that arise from regional, national and international needs concerning the teaching of science in terms of teacher shortage, aspects of modernization, and ICT-related issues.

A particular focus is set on subject-related aspects, which should be more considerately balanced with education-related content. As mentioned above, for the other programmes offered at ACEITLMS, the ratio of laboratory-based practical training was not completely clear, as was the consideration of training concerning possible limited laboratory facilities at schools (see Chapter IV.6). To this effect, ICT-related aspects should also be considered regarding flexibility of use and a range of tools for prospective teachers. Additional training in Academic Writing already at the Master's level should also be considered in this programme (see old Finding 8).

b) Reconsideration evaluation in 2025

The teaching of general academic skills is being dealt with within the Research Methodology module and further enhanced through a series of seminars on academic writing and data analysis methods.

Though several documents have been developed for quality assurance purposes and some exemplars submitted, evidence regarding a proper Documentation Centre should be submitted. Furthermore, how information from alumni and other stakeholders are incorporated in reviewing curricula should be more detailed (see **finding 4**).

Conclusion

The criterion is fulfilled.

Programme specific aspects of Chemistry Education (Master of Education)

Experts' evaluation

a) Evaluation in 2022

The panel of experts checked if the desired qualifications to be achieved are presented as intended learning outcomes and to what extent they include subject-specific and interdisciplinary elements. The university has presented a broad array of learning outcomes in the programme specification in its SER. These outcomes are related to the subjects selected for delivery and capture interdisciplinary elements, which are desirable to impart to learners. However, the learning outcomes are the same across the programmes (from Biology to Chemistry education) with some slight modifications to customize to Chemistry education. This could be positive because the university is desirous of having a standard profile for its learners. There should be room to customize the learning outcome to the specific course/ programme as discussed above (see Finding 4).

For example, financial literacy cuts across the programmes, but in Chemistry education, it is spelt as follows: "Financial literacy: Having successfully completed this programme, students should be able to appreciate the contribution of chemistry on individual and social economic development". The panel of experts expect that it may be difficult to measure this outcome. Moreover, it stays unclear why this target should be subject-specific. The total number of learning outcomes for this programme is 34, which is rather heavily loaded. As mentioned before, for the other programmes, the number of intended learning outcomes should be reduced, and they should be redefined to create a more transparent profile of the programme and provide transparency to the students.

To a reasonable extent, the learning outcomes reflect academic/scientific and labour market requirements for the Master's teaching level aimed at producing teachers and researchers in Chemistry education. The learning outcomes reflect the academic/scientific labour market requirements in principle. However, given that the university has not yet conducted a labour needs assessment, the expert panel has no clear picture yet. They can give only this general statement on the aspect of the ILOs reflecting the labour market requirement.

The degree Master of Chemistry education programme corresponds to the expectation of such a programme in the region. Typically, demonstrated by coursework and dissertation /project emanating from independent research work. The academic degree corresponds to the learning outcomes and the requirements of the national qualifications framework.

There is precise harmony in three out of the four primary areas of the learning outcomes. These include: i) imparting knowledge, ii), application of knowledge, and iii) information literacy. However, it was impossible to discern how general transferable skills are achieved from the current curriculum structure. For example, in the course MEC6244: Applied Organic Chemistry. The learning outcome of employability and career development states as follows. Having successfully completed this module, students should be able to: "Work in natural product and polymer industries and train other employees about natural product isolation and polymer synthesis." In the opinion of the panel of experts, the curriculum as designed does not support the achievement of this learning outcome. First, the programme is geared towards training educators, not industry workers, and importantly, how this learning outcome could be measured, stays unclear (see old Finding 5).

The panel of experts assesses that the Master's programme in Chemistry Education curriculum is designed to expose educators/education researchers to critical areas of Chemistry they are likely to encounter at their place of work. However, an important area of Chemistry is missing in this curriculum (Physical Chemistry). The current programme has mainly two areas of Chemistry, inorganic and organic, with a particular emphasis on techniques and instrumentation. During the discussion with the teaching staff of UR, the respondent mentioned that they have the flexibility to teach physical chemistry in any of the other areas of chemistry, which is – in the opinion of the expert panel - not the norm (old Finding 13).

Additionally, the programme is particular on the subject matter, with six modules in education, including ICT and four in General Chemistry. This leaves little room to cover cross-subject and general skills courses. The range of courses offered in the curriculum should be revised, and it should be described in the course manual how all areas of Chemistry are covered and how cross-subject skills are taught (old Finding 14).

As concerns, methodological areas that include practical sessions for the Master's students, the curriculum does not explicitly disclose the distribution between practical laboratory and class lectures (see Finding 10). The section on teaching methods is stated as follows: “Lectures, presentations, problem-solving exercises, group discussions, practical, self-directed research study as well as thematic seminars”.

It is impossible to assess how skills are passed, the duration allocated, and how these are assessed. A case in point is module MEC6244: Applied Organic Chemistry. The learning outcome of Financial literacy reads as follows. “Having successfully completed this module, students should be able to: “Synthesize polymers and isolate medicinal plant and animal tissue compounds of commercial importance.” (see old Finding 5a).

The programme specification for Master of Chemistry education has provision to study via two modes of attendance: full-time or part-time only. However, this is not defined in the curriculum design as to how a student in the part-time mode progresses and is loaded differently from the one on part-time. There is a universal principle that the method of delivery selected should not compromise the level of engagement and quality of the academic programme. This needs to be spelt out clearly (see old Finding 11).

The programme-specific course handbook has a clear assignment of credits for each course and how the total credits are calculated. However, there are areas of each specific course module loading that are not transparently allocated. In addition, how these credits are segregated between practical and class lecture hours has not been explained. In all their Chemistry modules, there is mention that there would be practical sessions without providing for the same (see old Finding 12).

b) Reconsideration evaluation in 2025

While agreeing that the learning outcomes follow guidelines by the Rwanda higher education council (HEC), related to a requirement for LO to include both generic competences and cross cutting issues, learning outcomes need to be developed for a module taking into consideration the time alloted and should be attainable by the end of the module. There needs to be curriculum alignment regarding the LOs, content areas, teaching and learning strategies and assessment strategies for each module. It has also been written that “*Prior to delivering the module, lecturers provide students with concise learning outcomes relevant to the course content“*. Clarification on this statement is needed (see **new finding 1a**).

As for updated literature for the modules, further evidence is needed (see **new finding 1b**).

The university should define how a part-time study can be absolved by its students. UR should develop a study learning plan for this programme that addresses the part-time students' needs (see **new finding 3**).

There is now a distribution of practical and theory class. A new module has been added to ensure the teaching of Physical Chemistry. UR revised the range of courses offered in the curriculum adequately and described in the course manual how all areas of Chemistry are covered and how cross-subject skills are taught.

Conclusion

The criterion is partially fulfilled.

1.2 PhD Programmes

According to the SER, the primary purpose of PhD by Research programmes in Mathematics and Science (Biology, Chemistry, and Physics) Education should be to train professional educators and discipline-based

educational researchers firmly grounded within the scientific and mathematics disciplines and thereby supporting in building foundations of science and technology-led economy. According to the university, the PhD programmes equip candidates with knowledge and skills that enable them to fit into the labour demand as professional educators, researchers, and policy-makers in mathematics and science education. In the SER, it is presented that a good number of our PhD students are already employed at higher learning institutions and other organizations.

As the university states, candidates would have acquired the following specific qualifications after the PhD by Research programmes:

- the understanding of the philosophy, nature and history of mathematics and science (biology, chemistry, and physics) subjects
- the understanding and critical analysis of current issues in mathematics and science education
- the importance of studying mathematics and science education
- a theoretical framework for mathematics, physics, biology and chemistry education research and the principles of evaluation in mathematics and science education

In addition, the candidate should acquire the following cross-disciplinary qualifications: the process of doctoral thesis development, the process of academic writing and publication, and the use of research skills to solve existing issues in a diverse community and with a multicultural context. PhD students are supposed to collaborate closely with the research management team. Their participation in community outreach activities should support them in becoming responsible citizens. In contrast, publishing from their respective research theses equips them with a broad knowledge and research skills in their areas of expertise to contribute to addressing developmental challenges through impactful research publications.

The duration of each PhD programme is three years for full-time students and four years for part-time students. Full-time and part-time students can apply for a one-year extension of the duration of their study programme. Publications are the most important milestones for all registered PhD students since the programmes are research-based. Before submitting the thesis, a PhD student must publish two papers in journals accepted by the University of Rwanda, including journals indexed by Scopus. Besides, a PhD student must have a third manuscript ready to be submitted at least at the time of thesis submission.

Students should benefit from a range of research experiences during the PhD training period, including exposure to scientific events organized locally and, in the region, such as workshops, seminars, public lectures, participation in the PhD student's exchange programme, and conferences to present research papers.

During the PhD training period, students should benefit from a range of research experiences, including exposure to scientific events organized locally and regionally, such as workshops, seminars, public lectures, participation in the PhD students' exchange programme and in conferences to present research papers.

According to the university, the students are also required to complete several courses and training, write and submit articles for publication, and make presentations at various organized conferences related to mathematics and science education. Per the University of Rwanda (UR) academic regulations, a PhD by research degree is awarded only after the students successfully complete a study programme of 360 credits. This entails that the candidate has successfully written a research thesis and has presented and defended it in an oral examination to the satisfaction of the examiners following the regulations for awarding a Doctoral Degree. In addition to the thesis, the PhD students must take some postgraduate courses related to their proposal. The duration of the programme and the time for submission of the thesis are counted from the date of provisional registration.

Experts' evaluation

a) evaluation in 2022

Common aspects of all four programmes

Experts' evaluation

The PhD programmes include, in general, intended learning outcomes on the programme and the course level. The experts conclude, based on the evidence provided during the site visit, that the UR-CE uses rather generic learning outcomes, although there is an effort to customize the outcomes for the doctoral degree by giving subject-specific and cross-subject knowledge. There is a general assumption that some learning outcomes have been achieved at Master's levels and so they are carried to the doctoral level. This could disadvantage a student who went through a different Master's programme (not at UR-CE).

Comparably to the situation described for the Master's programmes, the experts believe that the high number of intended learning outcomes on the programme level are difficult to measure. Thus, the achievement of all ILOs on the programme level stays unclear. However, it has to be stated that the experts have no general concerns regarding the programmes' level, but it must the lack of evidence and transparency must be held. Also, the SER reflected on this matter by stating that most outcomes will be achieved in the final year or later. The experts understand that, being research-based programmes, the intended learning outcomes are not imparted with additional courses within the programme's scopes. However, the doctoral programmes should have certainty and definite intentionality to achieve learning outcomes. Therefore, ACEITLMS must reduce the number of learning outcomes and describe how the overall PhD level can be reached and how the course learning outcomes and the programme learning outcomes are interlinked. Evidence must be provided (see old Finding 4).

The scientific part of the programmes is adequate, while there seems to be little choice of modules. It is also suggested to ensure adequate subject-specific training at the school science level. Interdisciplinary elements, which would lend themselves to networking between mathematics and the natural sciences and between the natural science subjects of physics, biology and chemistry, or specific subject didactic modules, could not be verified. Issues of science education are recommended to play a more central role in teaching and examination (see old Finding 2). The methodological-pedagogical-subject-didactic training component falls short of international standards assuming that the PhD programmes will also train future lecturers for teacher training (see old Finding 3).

The presented course outline of the PhD Programmes shows an adequate covering of the relevant contents concerning a course-based programme. This holds especially true for research-related content. The intended degrees take into account both academic and labour market requirements.

In the documentation, the panel of experts reviewed and, in several interviews, the importance of integrating ICT into the curricular content was addressed and highlighted. The panel of experts recommend supporting this by offering specially designed didactic modules, e.g. didactic preparation of virtual experiments, lesson design in the virtual classroom, creation of own learning and experiment videos, evaluation of internet content, setting up learning platforms, and alike (old Finding 15).

The labour market's requirements should be sought continuously and regularly to ensure a close fitting of education and demand. Results of systematic surveys or measure-specific evaluations/recommendations for the further development of the programmes could not be identified, which is why regular, documented (full) feedback circles are highly recommended (see old Finding 16).

The panel of experts discussed if the academic degree corresponded to the learning outcomes and the requirements of the appropriate level of the National Qualifications Framework and concluded that it seems

adequate for a coursework-based PhD Programme. During the on-site-visit, the panel of experts also inspected a selection of PhD theses. They concluded that the examples of research-based dissertations viewed meet academic standards in terms of scope and quality.

The structure of the programmes supports the educational goals to be achieved. The continuous development of the students is ensured through mentoring. The undersupply of academic (support) staff and, in some cases, high mentoring ratios for some lecturers/professors appear to be problematic in some subjects (see below; Chapter IV.5).

The subject-specific necessary curriculum contents are well covered overall. The emphasis, in some cases, appears to be placed on the specialisations/preferences of the lecturers (content follows the lecturer); it is organised less in the sense of a spiral curriculum or an intended networked curriculum structure (lecturer follows the content). In consequence, cross-curricular content is generally still insufficient.

A structured, systematic inclusion of subject-related methodological elements should be fostered further if an established cross-curriculum. The students can apply the knowledge acquired in the PhD programmes in a practice-relevant way. As with the Master's programmes, there should be an even more potent (back)-linking/networking between university offerings and real-life practical requirements.

Since the programmes are relatively new, no major curricular modifications took place in the past years, which is accepted by the panel of experts. The question of developing a sustainable quality cycle/quality management, i.e. a systematic evaluation of the programmes offered by different stakeholder groups via an evidence-based development/adaptation of the content and structural offers to continuous benchmarking, should be addressed (see old Finding 16).

The teaching of general academic skills is implemented in the curriculum and could be further enhanced, e.g. regarding scientific research or writing academic papers. Considering future fields of application of PhD programme graduates, the offered didactic elements of adult education could also contribute to placing methodological-didactic knowledge on a broader basis (see old Finding 8).

As part of the PhD programme, students are given the opportunity for international exchange and participation in conferences. In terms of a reciprocal, mutually beneficial exchange, the UR would have to increase the attractiveness for international students and university teachers significantly.

The programmes contain few concrete statements regarding distance education and part-time studies, apart from the possibility of a one-year extension of the study programme. During the interviews during the site visit, it became clear that there is the possibility of a PhD study while working (for lecturers), but this could not be verified programmatically or as a separately planned programme specifically tailored to the needs of the respective target group.

Course plans/compilations of modules are available for the programmes. There is no choice of modules within the programmes.

In principle, the practical/experimental part, especially in the fields of physics/chemistry/biology, and the laboratory times provided for this are not explicitly specified either in the overall scope or in the experiments/practicals to be carried out on a mandatory basis. The information on this, including laboratory times determined during the accreditation visit, varies from 20% to 50% of the overall study time.

For part-time students, for example, extending the period until the successful completion of their studies to four years could be considered. In addition, it would be a consideration to offer a refresher course before the actual PhD programme starts here.

b) Reconsideration evaluation in 2025

There has been a markable improvement regarding the integration of education science aspects. Appropriate concepts related to mathematics and science education have been included together with strategies dealing with teaching and learning of mathematics and science at classroom level with respect to contents as well as extent. The module on Industrial Attachment is interesting to enable students of the study programmes to relate to the needs of the labour market.

Pedagogical skills are catered for within each module in the study programmes.

It is claimed that some learning outcomes for the programmes have been reviewed. The articulation of Learning Outcomes (LOs) appears to be an area where the URCE Team could benefit from targeted capacity building. To maximize impact and clarity, capacity building should focus on mastering the formulation of LOs that are measurable and framed in the language of competence. Enhancing the team's grasp of the core purpose of Learning Outcomes and the proper framing structure will significantly strengthen curriculum development. For example, how are the 49 (LOs) measured/assessed, for the PhD in Chemistry Education? In the long term the University should observe whether the measures are sufficient to reflect the core competencies at that level.

It is noted that appropriate emphasis is laid on ICT both in Masters and PhD programmes. UR should provide further evidence in respond to the finding regarding specially designed didactic modules (**new finding 5**).

Though several documents have been developed for quality assurance purposes and some exemplars submitted, evidence regarding a proper Documentation Centre has to be submitted. Furthermore, how information from alumni and other stakeholders are incorporated in reviewing curricula should be more detailed (see **new finding 4**).

Conclusion

The criterion is partially fulfilled.

Programme specific aspects of Biology Education (Doctor of Philosophy)

Experts' evaluation

a) Evaluation in 2022

The panel of experts discussed whether UR checks the programme for its appropriateness. The experts concluded that it is possible to discern whether these programmes are appropriate in the context of UR-CE. ACEITLMS admits Master's graduates from Rwanda and the region into doctoral programmes, which shows its importance for the region. There was no tangible proof of their appropriateness from a labour market perspective or graduate surveys. This could be explained by the fact that the programme is relatively new (2018), and there are no graduates.

A time plan well written and provided showing what will be done right from orientation (first month) until the total duration of 36 months for full-time students. However, it is not clear how the part-time student's progress. It simply mentions that it shall be a 4-year engagement. There are some specific elements that the programme has, such as part-time studies (though not well qualified/defined), Industrial attachment (1-3 months), and participation in community outreach. Besides the question of the feasibility of part-time studies (see old Finding 11), the other elements are reflected adequately and transparently in the design of the curriculum.

There is a general assumption that some learning outcomes have been achieved at Master's levels, and so they are carried to the doctoral level. This could disadvantage a student who went through a different Master's

programme (not at UR-CE). Moreover, the experts experienced this during the site visit; in the words of the student who had not studied at UR-CE initially struggled to keep up with the programme's demands.

The programme has not demonstrated the ability to foster the mobility of students for international exposure. Neither has it integrated the flexibility (credit transfer or waiver, due to prior learning) and different learner environment requirements. The MoU with MMUST university in Kenya lapsed in October 2021. It is unclear to the panel of experts if there are plans to renew it, impacting the current staff and students who teach/are being taught and supervised. ACEITLMS should hand in a concept of internationalization which addresses the aspects mentioned earlier of mobility, recognition and cooperation (see old Finding 24**)**.

As designed, one positive attribute of this programme should be strengthened: it has an aspect of community outreach and research and innovation events that should ideally prepare learners to encounter real-life situations.

b) Reconsideration evaluation in 2025

The university should define how a part-time study can be absolved by its students. UR should develop a study learning plan for this programme that addresses the part-time students' needs (see **new finding 3**).

Financial support is provided to help students to visit other institutions to share their experiences and learn from others. Students are also encouraged to attend and present research papers in international conferences.

Conclusion

The criterion is fulfilled.

Programme specific aspects of Mathematics Education (Doctor of Philosophy)

Experts' evaluation

a) Evaluation in 2022

This programme is of 360 credits and comprises courses and a thesis. The courses Research methodology and English Academic Writing are compulsory for all students. The first course focuses on research methods in education and Statistics applied to educational research to enable students to develop further the necessary competencies in conducting research at this level. The English Academic writing course ensures that the students possess the necessary competencies in critical writing and producing evidence-based arguments. The students are required to complete a minimum of four courses. The others chose from the post-graduate courses related to their proposal or from the generic modules. These modules are non-credited and are assessed based on attendance, participation and completion of course works or assignments. They are assessed on a Pass/Fail basis.

The mathematics courses are:

- Applied statistics and probability in education
- Advanced algebraic structures
- Riemannian and symplectic geometries
- Selected topics of mathematics analysis

Minor Generic Skills courses: Entrepreneurship, Finance, Business/Management, Grant proposal writing.

The courses are typically chosen following the discussion and advice of the supervisor(s) based on the research proposal and the student's disciplinary and professional development needs. Compulsory and elective courses for the student are recorded in the individual study plan.

Candidates applying for this PhD programme should have a Master's degree in Mathematics with an undergraduate degree in education or an undergraduate degree in Mathematics with a Master's degree in education.

As stated, the primary purpose of the PhD programme is to train professional educators and discipline-based educational researchers firmly grounded within the mathematics discipline, thereby supporting in building foundations of science and technology led economy. The PhD programme equips candidates with knowledge and skills that enable them to fit in the labour market as professional educators, researchers, and policymakers in mathematics education.

Upon completion of the PhD by Research programme, candidates would have acquired the following:

- understanding of the philosophy, nature and history of mathematics
- understanding and critical analysis of current issues in mathematics education
- the importance of studying mathematics
- the theoretical framework for mathematics education research and the principles of evaluation in mathematics education

The PhD Handbook is well laid out with detailed descriptions of admission procedures, roles and responsibilities of the Supervisory Team and the Doctoral Committee. The expectations from the students at each milestone from the Initial PhD proposal presentation, Comprehensive Examination for Doctoral Candidature, PhD Synopsis presentation, and Oral Examination of the thesis are well described. Many templates to monitor and support students in their doctoral studies have been developed and used. These include monthly reports, minutes of student meetings with supervisors, PhD Annual Progress Report, Community Outreach Report and student self-evaluation report.

The PhD programme is implemented through the Research Unit. The Head of Research, supported by the Administrator for Postgraduate Studies and Research, coordinates the planning and supports and monitors all research activities for academic staff and PhD students. The research unit organizes various PhD training, seminars, and workshops to support and improve staff research skills.

During the PhD programme, students are exposed to various learning opportunities, like workshops, seminars, public lectures, and participation in exchange programmes and conferences. Students have strongly emphasized the support and guidance the supervisor(s) provided during their training programme. The requirement for paper publication before submitting their thesis is of immense help to them. Indeed, publications are the most important milestones for all registered PhD students as the programme is by research. Before submitting the thesis, a PhD student must publish two papers in journals accepted by the University of Rwanda, including journals indexed by Scopus. Besides, a PhD student must have a third manuscript ready to be submitted at least at the time of thesis submission.

The primary supervisors must have appropriate qualifications in the relevant field or discipline, have undertaken supervision training, have demonstrated expertise in the field of Mathematics in which the student research is located and are active researchers. The assistance of external supervisors is also sought.

The Doctoral thesis is examined by two examiners external to the institution, at least one of whom is from outside the country. The candidate subsequently presents and defends the Dissertation or Thesis in 45 minutes maximum, to the satisfaction of examiners in an oral examination, by the regulations for awarding a Doctoral degree by research.

The thesis themes are related to professional practice and deal with issues pertaining to teaching and learning mathematics at the school level. Two examples are:

1. The Effect of Professional Development Activities on Mathematics Teachers Technological Pedagogical Content Knowledge and Attitudes in Tanzania: A Case of Dar es Salaam Region.
2. Effects of Cooperative Learning on Students' Mathematical Reasoning and Self-efficacy in Selected Secondary Schools, Ndola District, Zambia.

In a nutshell, this PhD programme in Mathematics Education is well designed. It is in line with the overall objective of the UR Strategic Plan (2018-2025) "to increase the production of relevant, high-quality scientific knowledge that contributes to Rwanda becoming a knowledge-based economy".

b) Reconsideration evaluation in 2025

No further evidence required. The experts already saw no need for short-term changes or additions in this area in the first evaluation of the programmes. Therefore, there is nothing to add to the previous evaluation.

Conclusion:

The criterion is fulfilled.

Programme specific aspects of Physics Education (Doctor of Philosophy))

Experts' evaluation

a) Evaluation in 2022

Several aspects which are mentioned in the overall comment at the begin of this chapter are also true for the PhD study programme of Physics Education at the UR. The programme is outlined as coursework-based and seem very well founded as it covers the most relevant areas of concerning research, research methodology, writing & publication etc.

The described curriculum is based on challenges that arise from regional, national and international needs concerning the shortage of both teachers, lecturers and teachers' consultants. In order to ensure the fitting between education and labour market, an ongoing regular benchmarking, monitoring and evaluation is recommended to ensure quality, relevance and affordability. This assessment should include both students and stake holders in a closed feedback circle (see Chapter 2).

The outlined PhD programme convincingly display content- and method-related aspects. It is likewise profoundly research-oriented in a sense that students are well familiarized with sciences education research.

The study programme contains different forms of requirements. As the students reported, mainly the demanded three publications constitute a certain challenge, especially since the procedures of acceptance are off their hands.

One of the strengths of the programme is that the students reported they obtain much support both personally as well as financially and academically on the part of UR, the School of Education and lecturers.

In order to enable students to perform on a high international level concerning their research, a facilitation e.g. or adequate access to digital resources like journals and books is needed and should be provided for. The students also expressed their appreciation and wish for more seminars and possibilities of peer-learning and tutoring.

b) Reconsideration evaluation in 2025

No further evidence required. The experts already saw no need for short-term changes or additions in this area in the first evaluation of the programmes. Therefore, there is nothing to add to the previous evaluation.

Conclusion:

The criterion is fulfilled.

Programme specific aspects of Chemistry Education (Doctor of Philosophy)

Experts' evaluation

a) Evaluation in 2022

The programme is relatively new (implemented in 2018) and has no graduates yet. Thus, a tangible proof on the appropriateness of the programme from the labour markets' perspective by graduate and employer surveys is currently difficult. Based on the regulations provided, the experts can state that the programme fits to the Rwandan Qualifications Framework. The admission profile of Master's graduates from Rwanda and the region into the doctoral programmes indicates that the programmes are visible and attract students.

There exists a time plan, showing what will be done right from orientation (first month) and the total duration of 36 months for full-time students). However, it is not clear how the part-time students progress. It simply mentions that it shall be a 4-year engagement (see old Finding 11).

The programme has not clearly demonstrated the ability to foster the mobility of students for international exposure. Neither has it integrated the flexibility (credit transfer due to prior learning) and different learner environment requirements. However, the one positive attribute of this programme as designed should be strengthened. They have an aspect of community outreach and research and innovation events that should ideally prepare learners to encounter real-life situations after their training. There are some specific elements that the programme has, such as part-time studies (though not well defined), Industrial attachment (1-3 months), and participation in community outreach.

The actual volume of work done to attain this PhD is not transparently allocated. Although this is a PhD by research, there are some elements of courses that students are required to take. For example, the programme specification mentions that there will be minor and core disciplinary modules that run concurrently for 3 semesters. In addition, in the SER it is mentioned that lectures are to be delivered as expected.

Since the inception of the programme and admission to the 2017 Cohort, there has not been a PhD Theses in Chemistry Education completed (refer to the overview of the last 5 years). Their admission since inception is as follows Chemistry Education (9) students. The allowable duration is 36-48 Months. This implies that the timeline is not being observed as there are students who have overshot their allowable duration. The panel of experts gets the impression that there could be a hindrance to timely completion, which is important for UR-CE to decipher and provide a solution (see old Finding 16).

While the UR-CE is reaching out to personnel in the region and beyond to complement her capacity. There is a need to listen keenly to her students in the current programme. In the feedback evaluation students seem to suggest that some delay is occasioned by local supervisors whose signatures are more accepted compared to those from partnering institutions.

The MoU between UR-CE and MMUST university in Kenya lapsed in October 2021. It is unclear if there are plans to renew it. It should be clarified what does that mean to those staff and students being taught and supervised currently (see old Finding 24).

b) Reconsideration evaluation in 2025

The university should define how a part-time study can be absolved by its students. UR should develop a study learning plan for this programme that addresses the part-time students' needs (see **new finding 3**).

Though several documents have been developed for quality assurance purposes and some exemplars submitted, evidence regarding a proper Documentation Centre has to be submitted. Furthermore, how information from alumni and other stakeholders are incorporated in reviewing curricula should be more detailed (see **new finding 4**).

Financial support is provided to help students to visit other institutions to share their experiences and learn from others. Students are also encouraged to attend and present research papers in international conferences.

Conclusion:

The criterion is partially fulfilled.

- **Procedures for quality assurance**

Master 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]

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

The university states that for quality assurance of their four doctoral and four Master's programmes, the ACEITLMS applies its existing quality control mechanisms and practices to ensure that the academic and research endeavours are benchmarked to national and international standards.

According to the SER, every UR academic programme should undergo a review for quality assurance from the concerned department, School/Centre Council, external reviewers, College Directorate of Teaching and Learning Enhancement up through College Academic Council, UR Postgraduate Studies Committee, to the University Senate. Monitoring and evaluation of academic programs occurs within each college based on a self-assessment of the internal quality framework.

Rwanda has a National Qualifications Framework governing accreditation of courses and programmes which is administered by the Higher Education Council of Rwanda (HEC). The HEC provides Handbook for Academic Quality Assurance and Enhancement and the Maintenance of Standards in Higher Education to ensure quality inputs and outputs of curricula in higher learning institutions. Furthermore, all new programs must be approved by the Council. Periodically HEC carries out programme and institution audits. The East African Quality

Assurance Network of the Inter-University Council for East Africa (IUCEA) also provides guidelines for quality in higher education in EAC region.

Among other quality assurance mechanisms, the university states that ACEITLMS also use the Student Evaluation of Teaching and Learning to monitor and improve students' satisfaction in learning. It should serve to improve instruction, the learning environment, as well as to evaluate the performance of the lecturers.

The university also organized a Regional Inception Workshop, in which they invited regional partners to discuss needs in the science/mathematics education sector and skills required for students in their Master's programmes. According to its own statement Satisfaction surveys have also been regularly conducted and outcome reports availed to all stakeholders. This should help in deciding about what type of intervention is needed and implementing corrective strategies whenever required.

The workload or assignment of credits or hours in the module/course descriptions assessed or estimated are guided by details provided in the note of guidance for module description as developed by HEC and supplemented by the General Academic Regulations for Postgraduate Studies as approved by the University Senate. These general academic regulations should also guide the assessment. The university states that after each semester, the results are consolidated and deliberated at a different level and approved by the UR-CE College Academic Council. In the end of semester results of Master's students, different statistics, including number of redo exams for failed modules, average marks in different modules, dropout, etc. are presented, as per UR formats.

Experts' evaluation

a) Evaluation in 2022

These programmes of the Cluster Science at UR have been designed as per the National Qualifications Framework governing accreditation of courses and programmes which is administered by the Higher Education Council of Rwanda (HEC). The Higher Education Commission is a regulatory agency responsible for the maintenance of quality assurance in the provision of Higher Education programmes. In line with the University of Rwanda policy, the programmes have undergone a review for quality assurance from the concerned department, School/Centre Council, external reviewers, College Directorate of Teaching and Learning Enhancement, College Academic Council, UR Postgraduate Studies Committee, to the University Senate. Thus, the programmes are validated at different instances before approval at the Senate level. National accreditation was also obtained from the Higher Education Council. The HEC also conducts external audits of the university.

The HEC also provides Handbook for Academic Quality Assurance and Enhancement and the Maintenance of Standards in Higher Education to ensure quality inputs and outputs of curricula in higher learning institutions. In addition, The East African Quality Assurance Network of the Inter-University Council for East Africa provides guidelines for quality in higher education in EAC region.

The university states that for quality assurance of the four doctoral and four Master's programmes, the ACEITLMS applies their existing quality control mechanisms and practices to ensure that the academic and research endeavours are benchmarked to national and international standards.

Regarding research, the Directors of Research and Innovation at the College and University levels and UR Centre for Postgraduate Studies oversee the quality of research implementation processes and peer review mechanisms for research and conference outputs. The collaboration of highly experienced professors from external institutions enhances the quality of supervision, publications and research outputs. They contribute to a great extent to joint conferences and workshops.

Among several quality assurance mechanisms in place by the university, Student Evaluation plays a fundamental role in assessing the effectiveness of the teaching, learning and assessment strategies adopted by the

tutor and the overall appreciation of the students. Student Evaluation of Teaching and Learning is used to monitor and improve students' satisfaction in learning. It serves to improve instruction, the learning environment, as well as to evaluate the performance of the lecturers.

For the Master's programme, the questionnaire comprises 22 questions assessing the following key elements:

- Teaching and Learning
- Research
- Supervision
- Welfare
- Facilities (such as Library, Computer, Hostel and space for self-study)

After analysing the responses, a report is prepared with statistical data and recommendations made to the Teaching and Learning Unit.

For the PhD programme, the questionnaire comprises 24 questions assessing the following key elements:

- Training and seminars
- Research
- Supervision
- Welfare
- Facilities (such as Library, Computer, Hostel and space for self-study)

After analysing the responses, a report is prepared with statistical data and recommendations made to the Research Unit.

Apart from student feedback via Student Feedback Forms, it was stated that data from other stakeholders were collected through needs analysis workshops and informal discussions. The perspectives of other stakeholders, like the academics and administrative staff, graduates and employers, are essential, and their feedback needs to be collected systematically. This needs to be taken into consideration to enhance the quality and ensure the relevance and currency of the programmes. There needs to be a balance between the use of quantitative and qualitative tools, which are complementary. The inclusion of alumni and employers in the design, development and review of programmes is fundamental to ensure competencies and skills needed for the market are present in the programme (see above).

Internal Quality Assurance should not be developed solely as a response to External Quality Assurance. It should function as an interconnected and coherent system across the institution, working towards continuous quality enhancement. Although exchange with representatives of the labour market takes place, a regular, systematic review and, if required, readjustment/revision of the intended learning outcomes with the labour market requirements could not be sufficiently observed by the panel and is therefore recommended. The results of this formal exchange should be documented and implemented in the learning outcomes.

In a nutshell, it was found that several policy documents and quality mechanisms exist, but they need to be organised in a more systematic, holistic and comprehensive way. It was also not clear in what ways data collected from students and employers were feedback to them after analysis to close the loop.

The Internal Quality Assurance System (IQA) of UR should be presented in such a way that it is transparent for its internal and external stakeholders how the quality of the programmes is developed, implemented and monitored on different organisational levels (central, faculty, department). To reach this, the following aspects has to be considered (old Finding 16):

b. The core processes and results must be documented by an appropriate Documentation Centre (old Finding 16a).

c. When data (collected through the Student Feedback Forms) are analysed and reports prepared, consultation back with students must take place, which are essential to close the loop (old Finding 16b).
d. Feedback from academic staff through, say Lecturer Feedback Questionnaire and employers through Employer Feedback Questionnaire are to be collected. This stakeholder groups must also be informed about the outcome to close the feedback loop (old Finding 16c).
e. Feedback must be collected formally from other stakeholders involved as well as past students thought alumni. This information should be used for the design and development of curricula in line with the needs of society (old Finding 16d).

It could be beneficial for UR to exchange with other universities in the East African Region on experiences with and instruments of internal quality assurance. Compliance with regional QA mechanisms, policies, standards and guidelines could support the internationalisation of UR.

Since the inception of the programme and admission to the 2017 Cohort, there have not been many PhD Theses completed. The allowable duration is 36-48 Months. This implies that the timeline is not being observed as there are students who have overshot their allowable duration. The panel of experts gets the impression that there could be a hindrance to timely completion, which is important for UR-CE to decipher and provide a solution (old Finding 17).

b) Reconsideration evaluation in 2025

Though several documents have been developed for quality assurance purposes and some exemplars submitted, evidence regarding a proper Documentation Centre is needed. Furthermore, how information from alumni and other stakeholders are incorporated in reviewing curricula should be more detailed (see **new finding 4**).

Processes for monitoring student progress and their support are being implemented, and samples of student reports have been submitted**.**

Conclusion

The criterion is partially fulfilled.

- **Learning, teaching and assessment of students / Learning and assessment of students**

Master degree

The delivery of material encourages students to take an active role in the learning process.

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]

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

Master Programmes

The overall teaching, learning and assessment of students are guided by the General Academic Regulations for Postgraduate Studies as approved by the University Senate in 2018. In the SER it is described that the delivery of material and activities is set in a way that encourages students to take an active role in the learning process.

According to the university, the implementation of the programmes uses a variety of teaching and learning methods with supports student-centred approaches promoting students' participation. The learning and teaching strategies include different approaches:

- Lectures to present learning and teaching theories underpinning the given science or mathematics;
- Group discussion and brainstorming to involve students into the learning and teaching process during class sessions;
- Problem-solving activities, workshops and seminars to work deeply on some topics and to promote creativity, inquiry, critical thinking and analysis, presentation skills, cooperation and collaboration, as well as communication and teamwork spirit;
- Partner work and peer tutoring to engage students into knowledge sharing and understanding, social networking and interpersonal relations;
- Library search and case studies to promote lifelong learning, research and new updates in science or mathematics education;
- Use of ICT in learning and teaching;
- Fieldwork to connect theories and real-life situations.

After the eruption of the Covid 19 pandemic all facilities for a blended mode of teaching and learning were put in place to allow students to attend virtual classes.

In the SER it is presented that the needs of a diverse student population is an integral part of the implementation of the programmes. Candidates for the programmes are supported in various ways. As for employed students the programmes are duplicated to be offered during weekends in Kigali for easy access. Furthermore, the university has mechanisms to cater for students with disabilities, especially with a resource centre for students with disabilities and special needs.

Concerning the study organisation and feasibility, the ACE has a unit in charge of teaching and learning that executes all related activities coordinated by the Head of Teaching and Learning, assisted by the Administrator for Postgraduate Studies and Research, and monitored by the Deputy Director. The unit sets the timetables of teaching and learning, exams and is responsible for the implementation of the whole academic calendar with reference to the available regulations and guidelines mainly the UR-General Academic Regulations for Postgraduate Studies. The unit is in charge to monitor among others the completeness and no overlapping in time and content during the delivery of modules.

The university states that the assessment uses accessible criteria, regulations, and procedures, which are readily made available to all participants and which are applied consistently enabling to measure the achievement of the intended learning outcomes as per programme specifications and module descriptions.

The university states that assessment is a key and integral part of the teaching and learning process including for the ACEITLMS Master's programmes. The assessment either for course work or for research Masters' dissertations is done in conformity with the framework and regulations for higher degrees by coursework and dissertation. In this regard, all modules should be assessed through the in-course and end-of-course assessments. The in-course assessment accounts for 60% whereas the end-of-course assessment accounts for 40% of each module score. According to the university the in-course assessment can take many forms including

assignments with submitted reports or presentations, analytical papers, and practical and written invigilated tests. The written examination is administered for end-of-course assessment. Irrespective of the type of assessment, they should be guided by a number of UR official documents including but not limited to the UR guidelines for internal management of examination papers, UR guidelines on assessment, examinations, moderation and conflicts preventions, and UR guidelines on setting examination papers, formative assessment techniques and summative examination blueprints. All these regulations are available on UR website and freely accessible by all students.

Doctoral Programmes

As per the university academic regulations, a PhD by research degree is awarded only after the student has successfully completed a study programme of 360 credits. This entails that the candidate has successfully written a research thesis and has presented and defended it in an oral examination to the satisfaction of the examiners in accordance with the regulations for the award of a Doctorate Degree. In addition to the thesis, the PhD students must take some courses related to their proposal. They should successfully complete a minimum of four courses within a period of the first three/four semesters. The modules to be taken by students fall under three categories.

- Compulsory courses: Research Methodology (mainly focusing on research methods in education and Statistics applied to educational research) and English Academic writing
- Elective Courses: At least two should be selected from Compulsory modules and two from Generic skills modules.
- Minor Generic Skills courses: Entrepreneurship, Finance, Business/Management, Grant proposal writing.

These categories are non-credited, and they are assessed on basis of attendance, participation and completion of course works or assignments on a Pass/Fail basis. At least two should be selected from Compulsory modules and two from Generic skills modules. The students register for the course and are done under the guidance of the resident Co-Supervisor. According to the university active methods of teaching and learning are used to teach these modules. They include but are not limited to inquiry-based learning and project-based learning.

International students are given a priority to have accommodation on the campus and receive additional allowance compared to nationals. Their supervisory teams generally should include a supervisor from their home countries. In the SER it is presented that ACEITLMS has not yet received students with special needs, but has a School of Inclusive and Special Needs Education equipped with resources adapted for teaching and learning students with disabilities.

The university states that PhD students are given opportunities to assist resident supervisors in managing undergraduate lectures and laboratory experiments. The students are also encouraged to present to their peers, the supervisors, and UR-CE community the results of their research.

All PhD candidates are required to work under the guidance of the Supervisory Team (ST) comprising not more than three staff. The ST usually has one main supervisor and one or two co-supervisors of which one is a resident staff of the university. The main supervisor is the chair of the Supervisory Team. Main supervisors and Co-Supervisors are any competent staff from the host university of ACEITLMS or from any partnering institutions. Where external supervisors are appointed, it should be the responsibility of the Head of Research of ACEITLMS to ensure that the external supervisors are familiar with the university and programme regulations and expectations for thesis supervision. Normally, an external supervisor can be allowed as the main supervisor for a maximum of two students and can be co-supervisors for any other two students. The main (principal) supervisors are required to be active researchers with appropriate qualifications in the relevant field

or discipline, to have undergone supervisory training, and to have demonstrated expertise in the field of Mathematics or Science Education upon which the student's research is based.

Like the Master students, the assessment of PhD students is done following General Academic Regulations for Postgraduate Studies.

Initial PhD Proposal presentation

The students present their revised PhD proposal to the Doctoral Committee (DC) within the 8 weeks of their registration into the programme. The DC should allocate some elective courses along with the compulsory ones related to the research and the students' knowledge and skills needs and give suggestions to improve the proposal. The relevance of the courses may vary based on the student's experimental learning, disciplinary and professional development needs and therefore, students can do the selection in discussion with their supervisors.

Comprehensive Examination for Doctoral Candidature

To confirm their Doctoral Candidature, the students must appear for a comprehensive oral examination conducted by the DC and present their Extensive Research Proposal and research progress. The university states that the comprehensive exam tests the fitness of the candidate to proceed further with his/her PhD work. If the performance of the candidate in the comprehensive examination is satisfactory, his/her registration is confirmed with Doctoral Candidature. If the performance is unsatisfactory, he/she is given one more opportunity to appear for the examination within six months of the first examination, according to the university. In case the research student fails to successfully complete the comprehensive examination within the prescribed time limit, the university withdraws his/her registration.

PhD Synopsis presentation

Upon satisfactory completion of the research and publication of at least two research papers which are in UR accepted journals preferably, Scopus indexed journals and conference proceedings, the research scholar is permitted to submit the synopsis of the PhD work to the Head of Research at the ACEITLMS with the approval of the UR Director for Centre for Postgraduate Studies (CPGS) for presentation to the Doctoral Committee. The synopsis is submitted not later than a month before the DC meeting is scheduled.

Final examination of the thesis

- Thesis Submission and external expert assessment: The doctoral thesis is examined by two examiners external to the institution, at least one of whom is from outside the Country. At the time of the appointment letter, the examiner is provided with the academic regulations.
- Oral examination of the thesis: The candidate presents and defends the dissertation or thesis in 45 minutes maximum, to the satisfaction of examiners in an oral examination.

If the performance of the research scholar in the oral examination is satisfactory and the recommendations of the examiners are addressed to satisfaction, the student is deemed to have completed the PhD studies. The degree is awarded on the recommendation of the College Academic Council and approval by the University Senate.

In the SER it is described that all the regulations and guidelines are available for staff on UR and ACEITLMS websites. If a student has any complaint related to teaching, learning and assessment it should be well listened to (either student may come to the Office of Administrator of PG Studies and Research or may submit his/her complaint in writing) and addressed. The Research and Teaching and Learning Units should regularly arrange meetings with PhD and Master's students, respectively, to listen to their complaints and address them. The administration of the ACEITLMS arranges regular meetings with the students and two students'

representatives are part of the Centre's management meetings. The ACE also has a GRM (Grievance Redress Mechanism) System which regularly arranges meeting with students.

Experts' evaluation

a) Evaluation in 2022

The panel of experts have no doubts that ACEITLMS strives to develop learning and teaching methods which contribute to a student-centred learning environment. Learning and teaching in all programmes seem to be provided on a high theoretical level. It stayed unclear to which extend the teaching considers the diversity of students' needs, enables flexible learning paths and stimulate student motivation, self-reflection, and engagement in the learning process. The student representatives who met with the panel of experts during the site visit were satisfied with the quality of teaching which takes place at the ACE. Students in the Master's and PhD programmes reported to feel well-assisted by the teaching staff and their supervisors. Also, the PhD students felt that the supervision arrangements foster the academic progress of the research work. However, the discussion led to the conclusion, that the time slot for a viva for PhD candidates should be extended (old Finding 18).

The panel of experts has no doubt that the students in both programmes are supported and trained to transfer their knowledge to situations outside the university context. Also, the methods of learning and teaching as well as assessment formats support an interlacing of theoretical and practical aspects. Nevertheless, like explained before, the orientation on the needs of the labour market, especially the aspect of practical teaching at schools in rural areas should be strengthened.

The programmes contain many different forms of assessment as well as methods of teaching. Guidelines, requirements and further support for the students seem communicated clearly in the written instructions and resources. Requirements to pass courses are laid out clearly and appear well-founded.

Due to the different bodies which are implemented at the college, the overall responsibilities for the organisation of exams seems to be well defined and accessible to the students. The specifics of examination procedures and possible different modes of completing the PhD programme are communicated transparently.

Like explained beforehand, the quality of the programmes suffers of an unprecise definition of the learning outcomes. Due to the high number of intended learning outcomes and the fact that they are either to broad or to detailed, the panel of experts cannot assess if the chosen assessment methods reflect the learning outcomes in the individual courses. In the SER it was presented that there is a range of examination formats used in the study programmes, but the experts cannot assess on the basis of the documents provided if the students are familiarised with an appropriate range of formats.

During the site visit the panel of experts had the opportunity to meet some of the external examiners virtually. The examiners are without doubt highly experienced researchers from respected universities. To which extend they are made familiar with examination methods and requirements at ACEITLMS cannot be assessed.

UR has a procedure for student appeals in place which is documented. However, a formal process for ethical clearance should be established before data are collected from the field (old Finding 19).

Students can retake an exam. There are regulations to compensate for possible disadvantages, illness or absence in exams. Students also reported that individual solutions have been found in case of hindrances in their study.

Although UR has regulations for students with special needs in place, the infrastructure of some of the buildings raised doubts that those students can access the classrooms and labs without support of fellow students or staff. Due to the fact that there are no handicapped students at ACEITLMS at the moment, there is no actual

problem. Nevertheless, it should be shown how UR will address the topic in a more structural way in the future (old Finding 20).

b) Reconsideration evaluation in 2025

It has been reported that presentation of student for the viva is for minimum 45 minutes but the discussions with the external examiners can go up to 2 hours, which is sufficient to fulfil the finding adequately.

Excerpts in connection to ethical clearance for collection of data have been submitted.

Regulations for students with special needs and regulations are being implemented. The Centre has a resource room equipped to facilitate students with disabilities in all aspects. Projects are being planned to set up more resource rooms to support students with special needs. The policy for mainstreaming disability is in place, alongside the plans to develop the building that meets the requirements are commendable.

Conclusion

The criterion is fulfilled.

- **Student admission, progression, recognition and certification / Legal status, admission and certification**

Master degree

Consistently applied, pre-defined, and published regulations are in place which cover student admission, progression, recognition, and certification.

[ESG 1.4]

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

Master's Programme

In the SER it is presented that - like any other programme offered at the University of Rwanda -, the General academic regulations for postgraduate studies have specific clauses concerning student admission, progression, recognition, and certification which are made available to potential candidates and other stakeholders and consistently complied with.

To be admitted to the Master's programmes, candidates should have an undergraduate degree with Honours in either Mathematics, Biology, Chemistry or Physics Education with upper second class or equivalent. For Bachelor's degree holders in Mathematics or Science without Education, a Postgraduate Diploma in Education is required. As English is the language of instruction at UR, candidates should demonstrate sufficient English proficiency to undertake a Master's level work.

Degree obtained outside Rwanda should obtain equivalence with respect to the Rwanda National Qualifications Framework. Students have to apply for Master's programmes. A committee screens the applications and shortlists the candidates based on academic credentials and performance.

The prescribed number of candidates to be admitted by the ACEITLMS is selected based on the ranking and a selection report indicating the recommended candidates prepared by the Committee.

According to the university the students undergo a one-year course work where their progression is assessed through formative assessments and final exams as per programmes specifications and modules descriptions. Courses are monitored through regular attendances to lectures and assessments. Marks are deliberated and approved as per the General academic regulations for postgraduate studies. After successful completion of the first year, the Master's students renew their registration for the second years of research. They submit proposed research topics, got allocated supervisors and work on the research proposal which is assessed after three months. Upon satisfactory assessment of the proposals, the students are allowed to progress with the data collection by the Director of Research and Innovation, UR-CE. After data collection, the students analyse data and write the thesis. A thesis is submitted for examination following the General academic regulations of the postgraduate studies. After examination of the theses, the students submit the final theses. Consolidated results are then submitted to the College Academic Council and the University Senate for approval. Afterward, the students can graduate. Regarding the degree awarding powers, the law establishing the UR accords the university to award the degrees in relation to the programmes it offers. The accreditation of all 8 postgraduate programmes has already been provided by the Rwanda Higher Education Council.

Doctoral Programmes

Admission procedures for Doctoral programmes follow principles and guidelines as defined in the UR General Academic Regulations for Postgraduate Studies. Candidates applying for the ACEITLMS PhD programmes should have a Master's degree in Mathematics/Science (Biology, Chemistry and Physics) with an undergraduate degree in Education or an undergraduate degree in mathematics/science subject(s) with a Master's degree in Education. The candidate must have sufficient knowledge of English, which will be the medium of instruction.

Students have to apply for doctoral programmes. A committee screens the applications and shortlists the candidates based on academic credentials and performance. The prescribed number of candidates to be admitted by the ACEITLMS is selected based on the ranking and a selection report indicating the recommended candidates is prepared by the Committee.

The confirmation of doctoral candidature normally occurs not later than the second semester after commencement into the doctoral programme provided the student has successfully defended his/her PhD research proposal. All along the PhD journey, the student's progression is done through several reporting mechanism, according to the university. The student works with his/her supervisors (at least two), submits weekly and monthly reports, six-monthly progress reports and annual progress reports which are checked vis à vis the Individual Study Plan (ISP) which should be prepared at the beginning of the year and agreed upon by the supervisors and Head of Research. The satisfactory annual progress report signed by the supervisors, checked by the Head of Research and approved by the Director of the ACEITLMS supports the student to renew his/her annual registration.

Upon satisfactory assessment of the proposals, the students can progress with the data collection by the Director of Research and Innovation, UR-CE. After data collection, the students analyse data and write the thesis. A thesis is submitted for examination following the General academic regulations of the postgraduate studies. After examination of the theses, the students submit the final theses.

In addition, the Research Unit arranges quarterly meetings with supervisors, and meeting with students to discuss progression issues and when any matter needs administration support it is reported to ACE's management for action.

Towards the completion and upon meeting the requirement for thesis submission for examination, the student submits intention to submit his/her thesis for examination and all procedures related to examination continue as per the General Academic Regulations for Postgraduate Studies.

Experts' evaluation

a) Evaluation in 2022

The Criteria for admission to a Master's programme are established and available on the website. Students applying for a Master's should have a Bachelor's degree with honour in their subject and a sufficient part in teaching. Moreover, if a prospective student is missing some of the requirements, there is the possibility for them to retake these courses.

Absolving consecutive modules in their subject-related courses it is necessary and very useful for the students already have a lot of experience in their subject from pre-graduate studies. The same goes for the educational part of the study programme. As most of the students are aiming to become a teacher or even working in adult-education, it is mandatory for them to have a fundamental understanding of the didactics and educational studies of their subject.

The students' admission to the Master's and PhD Programme seems reasonable. Furthermore, the required language skills are very important since English is the language of most of the literature as well as the language in which the students have to write their thesis and thesis-proposals. However, the students enrolled in the Master's programme "Mathematics Education" have prior knowledge of fundamentals in education and pedagogy done in their undergraduate programmes. However, it is felt that this Master's programme does not cater enough for further pedagogical issues and didactics of the subject to empower teachers/prospective teachers in enhancing their capabilities in dealing with changing demands and in effective teaching and learning at the classroom level (see old Finding 3).

Moreover, the programme also admits those students with a Bachelor's degree in Mathematics who did not study education modules and are required to complete two additional modules (PGD 6141 – Foundation of Education and PGD 6242- Educational Psychology). This practice seems insufficient to provide the necessary foundations in education and pedagogy for the Master's programme and a solid base for the upcoming doctoral programme. ACEITLMS should implement measures to ensure that students either have sufficient pedagogical competencies when they enter the Master's programme or can gain these while studying (old Finding 21).

The number of female students is significantly below the males in the Master's programme "Physics Education". Specific strategies to enhance the number of female students were reported to be in place both by UR and the students. Further effort in this direction, including the rise in numbers of female lecturers, however, is required (old Finding 22).

The University of Rwanda is entitled to award Doctoral degrees. The legal status of doctoral candidates is clearly defined. The process to award a doctorate is also clearly defined. Being a relatively young study programme, there are very few alumni, so in general this point is yet to be seen.

On the other hand, the experts see that the university seems to very well keep track of the few students, who have graduated in this programme up until now, and encourage the university to continue their efforts in keeping a good relationship to their graduates and building upon their experience in the labour market as well as establishing a very general system of gathering data about their whereabouts and student curricula (see above).

Although it seems to the experts, that it is quite uncommon for students to change universities during their studies, the experts could not find mechanisms for recognising prior learning in the documents (old Finding 23).

From the discussions during the site visit the experts learn that most of the foreign students come from bordering African countries, especially Ghana. The same goes for the academic staff. Furthermore, the experts learn that it seems to be very difficult for the university to send students abroad, since it is very expensive to support them financially. But there are exchange programmes for students with e.g. Belgium and Sweden as well as some visiting professors from English-speaking countries. It is recommended that ACEITLMS strengthens its efforts to support the mobility and internationalisation of its students (old Finding 24). And also, the university is hoping to open their borders and attracting foreign students by being internationally accredited.

When graduating from their study-programme, the students are handed a transcript of records, on which the modules they graduated from are listed as well as the learning outcomes of these modules. Yet, the panel of experts encourages the UR to formalize documents such as a diploma supplement (old Finding 25), in which, as stated in the guidelines, further information on the university and the surroundings of their graduation is given, such as for example the national context, further information on the University of Rwanda and so on, in order for students being able to being recognized easier on the global market of education.

The amount of work done to attain the PhD programme is not transparently allocated. Although this is a PhD by research, there are some elements of courses that students are required to take. For example, the programme specification mentions that minor and core disciplinary modules will run concurrently for three semesters. During the site visit, the panel of experts asked this question, and the reply was that “all students are encouraged to take the modules available, and it is often at the supervisor's discretion to make recommendations as to which module a student would take”. Since the programme's inception and admission to the 2017 Cohort, a PhD thesis in Biology and Chemistry Education has not been completed (refer to the overview of the last five years). Their admission since inception is as follows: PhD. Biology Education (12) and Chemistry Education (9) students. The allowable duration is 36-48 Months. This implies that the timeline is not being observed. The panel of experts has no data on the reasons for the delay, but it got the impression that there could be a hindrance to timely completion. This is important for UR-CE to decipher and provide a solution. ACEITLMS must document for the PhD students to which extent other courses should be taken in which semester and how the workload is distributed between the semesters. A follow-up on the delay in completing the studies and the reasons must occur. There is a need to listen keenly to her students in the current programme and document this information for improvement (see old Finding 17).

b) Reconsideration evaluation in 2025

Additional pedagogical training is provided to students from other universities through structured courses, seminars and workshops.

It is claimed that efforts done by ACEITLMS to increase female enrolment have produced good results. Samples of student enrolment have been submitted. Some measures to encourage female attendance are partial waiving school fees and extra incentives on the stipends / living allowances.

The write up from the university as well as evidence submitted mention equivalence of qualifications while the suggestion was about recognition of prior learning. A Recognition of Prior Learning Policy may be developed (**new finding 6**).

Financial support is provided to help students to visit other institutions to share their experiences and learn from others. Students are also encouraged to attend and present research papers in international conferences. Furthermore, UR provided sufficient evidence for cross-border exchange among staff and students.

Transcripts are being provided to all successful students on the programme with appropriate details on each module. An issue of diploma to those students who have not completed the whole programme but have completed a substantial part of it as an exit point can be considered. These should be clearly detailed in the programme handbook (**new finding 7**).

Conclusion

The criterion is fulfilled.

- **Teaching staff / Academic level of supervisory staff**

Master 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]

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

In the SER ACEITLMS explains that all academic staff involved in teaching and supervision could benefit from a wide range of development trainings to update and improve their teaching and supervision. In addition to their PhD qualifications in various areas of specialization, most of them have undertaken a mandatory Post-graduate Certificate course in Teaching and Learning in Higher Education. For supervisors, ACEITLMS organize once a year a training workshop on Postgraduate Supervision. This is a structured course programme, delivered by UR and its partner experts. As a response to the COVID-19 pandemic, all teaching staff and supervisors received various training in digital teaching. The administrative and technical staff also got different trainings with the support of the ACEITLMS.

According to the university, ACEITLMS has also a staff exchange programme through which local staff and staff from partner institutions visit and share experiences and improve their teaching and research expertise.

Master Programmes

The university states that the ACEITLMS Master of Education programme has the course work component, and the research (dissertation) component. Teaching staff for specific mathematics and science (Biology, Chemistry and Physics) subjects are mostly PhD holders with specialization in one of the specific areas. Cross-cutting education modules have each a teaching team made of PhD holders with a variety of specialization in various fields of education.

The planning for all teaching and assessment activities related to ACEITLMS Master's programmes is done by the Head of Teaching and Learning, supported by the Administrator for Postgraduate Studies and Research and in close collaboration with the College Registrar's office.

The workload of teaching staff is according to the university effectively monitored and accounts for existing teaching workload for other teaching duties and responsibilities within various UR-CE schools and departments. Some academic staff with partnering institutions are also involved in the research supervision of

postgraduate students. For assessment of workload, the university states that they provide a sample of performance contract evaluation of an academic staff and samples of students' attendance lists in some modules

Doctoral Programmes

For ACEITLMS postgraduate programmes, each Master/PhD candidate has at least one and two supervisors, respectively, appointed by the College Principal. One staff among members of the supervisory team is qualified as the Director of Studies and is responsible to the university for the ethics of the student's research and ensures that the university's procedures are followed.

The Director of Studies is a member of the university's staff. Normally she or he is the first supervisor, with responsibility for supervising the candidate on a regular and frequent basis, but sometimes or at some stages of the degree this role may pass to another supervisor. Academic staff involved in the supervision of masters and PhD students are appointed as supervisors depending on their area of specializations and the students' research topic of interest.

The university states that for supervision, effort is made to ensure that there are shared experiences among the supervisory team to support the student on subjects (Mathematics, Physics, Biology, Chemistry) field and on education field. The recruitment of teaching and research staff for ACEITLMS programmes should be open, inclusive, and competitive depending on the needs. For the recruitment, Government of Rwanda and UR regulations and procedures related to the recruitment of staff are strictly followed.

Experts' evaluation

a) Evaluation in 2022

The panel of experts has to assess to what extent the resources fit the size of the student body. The information provided has not segregated teaching staff on MA and PhD; therefore, it is assumed they share the workload of teaching and supervision. The university has made some improvement to build the number of staff to support the programmes. The panel of experts observed that the programmes are designed based on the expertise of the available staff. This could be positive but also disadvantageous.

The reported programme administration holds staff members of academic background both in science as well as science education. As there seem to be a shortage in staff on higher educational level, training and development of the present and prospectus teaching staff are and need to be further considered.

The university has not fully met the requisite ratios in some disciplines. For example, The HEC report of 2019 recommended that UR-CE increase technical staff to complement teaching in practical areas of the sciences on offer. The panel of experts observed that there was one technician in Biology and Chemistry. The technical staff is the one who services all courses from undergraduate to postgraduate. The panel of experts considers this number of technical staff far too low and requires that UR hands in a staff development plan for the next five years which demonstrates how technical staff will be developed regarding number and areas of teaching (old Finding 26).

The university has a complete list of teaching staff and at the site visit; the panel of experts had an opportunity to interact with some newly recruited staff. This is commendable. In addition, the Staff on the list present and accessible in the programme schedules are mostly PhD holders. The university also has access to qualified staff in the region through various MoUs provided.

However, during the site visit, it was not possible to establish the hours of teaching and loading for each staff (teaching and supervision and other university responsibilities). It was also apparent that there is no mechanism to monitor supervision of graduate students. In some programs, there were cases where staff had as high as six students while others had two.

An observation with the disciplines of staff, there are areas such as ICT, inorganic chemistry, molecular genetics, that have one staff each on board. This is a disadvantage on the quality of the programmes because of limited diversity of expertise. For example, a scan through the moderated scripts and exams show that the experts hardly get technical input into their areas of expertise once they have set examinations. This affects quality assurance by not providing a robust internal moderation exercise. UR-CE should try to interconnect to the broad pool of experts in the region for augmenting areas of deficiency. It could take advantage of the East Africa Mobility programme under the auspices of IUCEA.

Since the staff complement is broad, it is possible to assume that they are adequate in delivering the course learning outcomes. Although it would be good to match the expertise of staff and learning outcome. This can be achieved at the next cycle of programme review.

In terms of appropriateness of workload to deliver the programme, the panel of experts would not say authoritatively, but from the feedback given by the students, it is possible to guess that some staff tend to get overloaded. The university has not monitored the loading of their respective counterparts (in other countries/ institutions) involved in teaching and research, for this reason UR-CE is not aware of risk of overloading among her staff. A mechanism or process to monitor the workload of the teaching staff must be implemented at UR (old Finding 27).

As for the availability of staff over the next six years, the panel of experts would guess majority would be available over the mentioned period, because the turnover is relatively low.

On the basis of the information given in the SER and the discussions during the site visit, the panel of experts gives the following recommendations to get a broader understanding of the staff composition (old Finding 28 a-d):

a. A staff list per programme/discipline and where there is cross listing (those in other disciplines, programmes, UR-Colleges) should be provided.
b. A mechanism to ensure diversity of disciplines should be implemented.
c. UR should attract international personnel to contribute to expertise and skills diversity.

The general trend is the UR-CE has hired specialist in the areas of discipline on offer. Where they don't have an expert on board, they have access through MoUs with other local and regional institutions.

There is a clear guideline on what is expected of the supervisor and student in the PhD Handbook. This applies to both the local and external supervisors. The university mentioned that these are supplied to the supervisors during orientation and appointment.

A minor issue, the guideline on supervision tends to establish a hierarchy, where the lead supervisor collects examination reports from the other supervisors and submits them. The experts wonder whether this allows for independence. It is a question for them what would happen where supervisors hold onto contrary opinion about a study outcome.

The university mentioned that they advertise and competitively recruit staff for their programmes. When they have to onboard external guest, they peruse the CVs at college level and agree to engage them. There is a form of orientation that enables staff to be aware of the requirements.

The university is clear on staff development, through long term and short-term training and skills development. At site visit, the experts encountered a staff who was also a student at the same time. This is commendable. Although, the staff was still involved in teaching duties as well as studentship.

b) Reconsideration evaluation in 2025

The experts appreciate the submitted staff development plan. The distribution of staff per programme shows diversity which is acceptable. The extend to which international staff are involved in the programme is

acceptable, especially at the level of External Examination of Dissertations. Otherwise in terms of recruitment, it may be out of the jurisdiction of the university. Further information of ways of implementation of guidelines would be helpful.

While there is submission of timetables, more details are needed on a university workload policy to monitor the workload of the teaching staff. **(new finding 9**).

Conclusion

The criterion is partially fulfilled.

- **Learning resources and student support / Support and research environment**

Master degree

Appropriate facilities and resources are available for learning and teaching activities.

Guidance and support is available for students which includes advice on achieving a successful completion of their studies.

[ESG 1.6]

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

Learning Resources

To achieve its objectives, the ACEITLMS acquires funding from the World Bank. According to the SER, ACEITLMS uses existing resources of the university as well as new infrastructure and resources for different academic services provided to students. Students are provided with facilities such as classrooms, library, laboratories, accommodation, and computer workplaces with free internet connection available and sufficient to the study programme.

Those facilities and services include among others:

- Classrooms for teaching of Master's course work programmes including one smart classroom and a Seminar room
- Research and innovation facilities, including existing science (Biology, Chemistry and Physics) labs
- One multimedia room to support lecturers for records and animating the modules resources
- Learning Management System: All modules are uploaded on this e-learning platform of the university, thus students can easily access teaching materials and feedback on assessment.
- ICT Laboratory (one ICT lab equipped by the Centre)
- Library equipped with hard/physical and e-resources.

Student Support Services and Research environment

Some of the students enrolled in four Master's and four PhD programmes offered at ACEITLMS, UR-College of Education (Main Campus: Rukara Campus) are financially supported by the Centre. The Centre provides monthly living allowances for their daily living expenses in addition to tuition fees support. The allowance provided should take care of category needs and consider whether the student is female or male, local or regional.

Other material resources such as rooms, library, laboratories, and computer workplaces with free internet connection are available to the study programmes. The needs of a diverse study population are carted for. For example, regional students are given priority to accommodation on campus preventing them from struggling searching accommodation outside with local language barriers, national students with female consideration are also facilitated with accommodations, if needed.

Regarding administrative and academic guidance, students are supported by the ACEITLMS administrative and academic staff. UR-CE also has a Directorate of Students Welfare, and Career Guidance and Employability Services to provide general support, advice, and guidance-counselling services to students. Information about the study programmes is available to the public through official channels such as the university website and ACEITLMS website and newsletters as well a range of unofficial channels such as social media. At the beginning of each academic year, orientation and induction events are organized for all new students and there is a directorate of students' welfare in place which offers continuously information about services made available to students including medical insurance and other sanitary related supports.

In the SER it is described that the teaching staff offer regular consultation hours which are made aware to Master's students and they are part of the regular workload. In this regard, at each staff office's door, it is per university rule to indicate the contact number of the concerned staff member, the contact hours as well as the contact of the direct manager to report to in case of non-satisfactory service delivery.

According to the university, ACEITLMS organizes various seminars and workshops for postgraduate students (and academic staff) with aim to improve the students' research skills. Trainings include for example, research proposals and academic writing, writing for publications, and training on research methodologies, etc.

During the PhD training, students also should benefit from the ACEITLMS students' exchange programmes whereby students are financially supported to join partner institutions and work with external supervisors on their theses and research-related activities including paper writing. On the other hand, PG students who qualify are not only financially supported to attend local, regional and international conferences to present their papers, but also to publish when their research papers are accepted for publication. In addition, students are also allowed to be co-investigators of research funded proposals by the ACEITLMS research grant scheme. The Centre also provides financial support for Research Projects of Master's and PhD students.

For professional development and carrier preparations, some PhD students are given modules to teach at undergraduate programmes, while many others are involved in assisting professors with tutorials, assignments and conducting practical experiments.

According to the university, a Grievance Redress Mechanism Committee has been established whereby the Committee meets students on a quarterly basis to discuss students' issues/or complaints, the Committee submits a report to the Centre Management whenever action is needed. The Centre also arranges meetings with both masters and PhD students and listen to them regarding their progression and complaints.

Experts' evaluation

a) Evaluation in 2022

The provision of information and the coordination of the programmes seem to be well organised. The SER states that all modules, including module descriptions, and learning outcomes, are uploaded online on Moodle, which is available for the students. Also, in the discussions, the experts got the impression that the students were quite satisfied with the feasibility of their studies and the information policy of ACEITLMS.

The SER states that the Centre of Education has established a unit in charge of teaching and learning, which centrally sets and coordinates all timetables, including exams. They monitor the timetable of all study

programmes and ensure no overlapping in time of the central modules. Furthermore, since there are a relatively low number of students each year, it does not seem to be an issue, and many solutions are found individually.

The whole issue of student consultancy and student support seems well settled at ACEITLMS.

During their Master's programme, students are assigned a personal supervisor from the academic staff, who helps them coordinate their study programme. Furthermore, there are regular consultation hours by staff members, and due to the small size of the courses, the students have the possibility to talk directly and give feedback to the module leader.

PhD students are assigned a personal supervisor on the professorial level, who helps them coordinate their study programme and gives support concerning publications.

The student life cycle is well covered with offers of consultancy. Beginning their studies, students participate in an introductory week, where they are shown around campus and learn about their study programme, possibilities of support, and their study programme.

For international students, support seems to be, again, very individual. In the SER, it is stated that students are facilitated in securing accommodation on campus and being picked up at the airport. Moreover, it states that (if possible) the supervisors of each international student include a supervisor from their home country to help the students individually.

The panel of experts has to assess how students are supported in finding practical placements and organising internships. However, due to the pandemic and the study programme being very young, there is not enough evidence concerning internships that this point can be reviewed.

Due to the relatively low number of students enrolling each year, the university can provide individual support for each student in question. Still being a very young study programme, the number of students with special support needs was relatively low. Although the experts see and acknowledge the individual support of students with the need for special assistance, they encourage UR in their efforts to establish a more general system, like explicitly installed contact points for students in question.

UR states that 84% of all students are funded by the government and supported by the African Centre of Excellence for innovative Teaching and Learning Mathematics and sciences at UR-CE, selected based on objective criteria. The experts were concerned about the continuity of these sponsorships in case of study delay, but the university and the students assured them that this was no problem.

The panel of experts also visited the library on the campus where ACEITLMS is seated and checked the availability of the appropriate national and international literature and other academic sources required for achieving the intended learning outcomes. The most important literature is available online nowadays, which makes it difficult for the experts to assess the number of journals available to students. However, their general impression was that the libraries' equipment should be enhanced especially concerning digital resources (old Finding 29).

In terms of physical resources, undergraduate and postgraduate students share one laboratory for biology and physics. In some areas, the numbers will be as high as 700 students of all levels using one laboratory for training. The panel of experts observed and noted that the UR-CE was unaware of the required/recommended class size of students attending a practical session. For this reason, no plan was provided for each cohort category of students. UR must hand in a concept of ensuring that the MA/PhD students have sufficient time in the labs for training and research (old Finding 30).

The Biology laboratory was reasonably well stocked with requisite equipment for basic routine experiments and demonstrations. The panel of experts was impressed by the teaching aids on display, like the model of a

dissected slug. That would be sufficient for demonstration to complement learning. Assessing the laboratory against the intended learning outcome in the course gives the impression that the laboratory has more than the necessary equipment. The teacher graduates are probably exposed to more than they would find in their field of professional practice.

An overall glance at the laboratory gives the impression that the facility is a general laboratory that may, to an extent, not correspond to the programme's specific requirements. For example, the course content Molecular Genetics MEB6244 has practical components which are supposed to be conducted in the laboratory. When the laboratory technical staff was asked how the practicals for the mentioned course were conducted, there was no clear explanation given. This gives the impression that the practicals for this course are not conducted within this facility. UR must hand in a plan to rationalise: if the programme requires practical sessions for which equipment is not available, the equipment should be bought, or the programme redesigned to fit the available equipment (old Finding 31).

There was one laboratory technical staff on site who was very responsive to questions when engaged. The issue of staff inadequacy in the laboratory has been mentioned even in prior audits (see Chapter Teach-ing staff).

The staff could not estimate the requisite class size for the laboratory lessons and whether there is rotational access to ensure all learners attend laboratory sessions. The panel of experts also asked if there was a guide or an outline to the practicals to be conducted per semester. This was lacking. The expert feels this should be stipulated so that it is clear how the practicals on offer complement what is taught in class (old Finding 32).

The staff at the UR-CE mentioned that they did not take student attendance whenever learners attended practical sessions. This is left at the discretion of individual lecturers. This is a deviation from the norm. A mechanism to account for each learner attending and participating in practical sessions is necessary. A template should be provided to follow up on lab attendance (old Finding 33).

The general laboratory SOPs (standard operating procedures) were not available on site as expected. Standard operating procedures should be developed (old Finding 34).

An inventory of chemicals and equipment alongside their operating manuals should be made available and easily within reach (old Finding 35).

Safe disposal of hazardous chemicals as is required in the Molecular biology laboratory was not provided. Especially considering that the calibre of learners in this programme is likely not from natural science backgrounds. This poses a risk to the users of the facility. The university should conduct a safety audit and have safety champions follow through with compliance (old Finding 36).

The equipment available in the Chemistry lab was adequate as per what was in the course content. The laboratory is equipped enough not just for a science education student but for a natural science student as well. The chemistry laboratory had a separated section, one committed to postgraduate lessons and another to undergraduate lessons.

The same question was posed as to how the learners take practicals, especially since the resources are shared. The technical staff responded that arrangements are made so that postgraduate and undergraduate would be in the same facility, while the postgraduate students help learn as they train the undergraduates conduct lab sessions. Then where there are specialised sessions for postgraduate, they have their separate session. This is positive as part of the training method. However, there was no sample of laboratory reports provided of experiments conducted by the postgraduate students making it not easily verifiable. Therefore, a template for laboratory reports should be provided (old Finding 37).

The question of loading staff has been raised even in an earlier institution audit. However, this has not been addressed at UR-CE, mainly for practical sessions. [Action: This requires immediate action

The physical laboratory does not cater for a person with a physical disability. The floor had barriers (explained as provision for plumbing) that restricted access. This is a challenge not just for the disabled but presents an Occupational hazard. UR-CE should develop Occupational Safety hazard guidelines specific to the laboratory and implement them (old Finding 38).

The chemistry laboratory did not meet the safety level requirements that are expected. For example, there was no eye-wash station. Laboratory SOPs are not in place. In case of fire warnings and how to handle emergency situations. Safety cabinets are not in sight. There was evidence of storage of hazardous chemicals in the open. The panel of experts would have liked to see a list of the inventory of chemicals—safe handling procedures and how and when they are to be disposed of. There was evidence of expired chemicals still on the bench. As mentioned before, the university should conduct a safety audit and have safety champions follow through with compliance (see old Finding 36).

Chemistry practicals are often preceded by conducting trail runs, which are recorded before students carry out actual practicals. This is not being done at UR-CE. A template should be developed and implemented (old Finding 39).

Facilities for students with special needs are partly available. One of the buildings' physical design would not cater to a student with a physical disability/special needs. However, there is a ramp to access the building. The movement inside the lab is limited. A concept must be handed in on how access to the lab building can be provided for students with disabilities (old Finding 40).

b) Reconsideration evaluation in 2025

The digital library resources were updated with digital resources for all programmes. UR handed in a concept of ensuring that the MA/PhD students have sufficient time in the labs for training and research.

Evidence has been given on how the programmes ensure sufficient contact to relevant resources out-side the university, including separate institutions (INES) for the requisite practice. Furthermore, evidence has been given how the programmes ensure that students have sufficient contact to practical components during the programmes.

Evidence has been submitted on a mechanism to account for each learner attending and participating in practical sessions.

General Laboratory Operating Procedures are stated to be shared. It has to be ensured that students are sufficiently informed in this way. An inventory of chemicals and equipment alongside their operating manuals is now available.

The details been submitted by the university provide for the fact that lab sessions take place, however, it would be better if the lab report takes captures the trials and the findings of the laboratory exercise.

Sample of laboratory reports submitted by students have been provided. An Occupational Health and Safety measures manual has been developed and is being used in the laboratories.

It is claimed that trial runs are being conducted prior to the actual practicals and also recorded, but evidence have not been provided (**new finding 10**).

Ramps have been constructed to facilitate access to the laboratories. The URCE Special need resource centre also is being used to facilitate students with special needs.

Conclusion

The criterion is fulfilled regarding student support.

The criterion is partially fulfilled regarding physical resources.

- **Information / Public information**

Master 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]

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

According to the SER, ACEITLMS has developed a communication strategy to guide the Centre on how to effectively communicate to its stakeholders by raising the visibility and profile of the Centre for the achievement of the overall objective of delivering quality postgraduate education and of building collaborative research capacity in education. ACEITLMS strives to inform both the public and relevant stakeholders about different programmes, intended learning outcomes, qualification awarded, teaching, learning and assessments procedure by using number of strategies as listed below. The university states that the ACEITLMS engages the media to widely cover its activities among them.

In the SER it is described that the Centre conducts outreach activities in different schools to sensitize the students, their teachers of the available opportunities in STEM, the Centre programmes, qualification to be awarded and market opportunities.

The ACEITLMS programmes are advertised on the main university website. Each time a call for application either for PhD or Master's candidates is issued, it is posted on these websites, and links are disseminated using social media platforms. The Centre uses these platforms to communicate the admission requirements, the qualification to be awarded, the teaching and learning procedures which are normally indicated in the call for application for each intake. In the SER it is stated that the rules and regulations for the Centre's programmes are also available on the Centre's website. Other information related to the teaching and the outcomes such as module descriptions are also made available to the Centre website.

In the SER it is presented that public talks in the College are arranged to make PG and UG students aware of the activities of the Centre and offered programmes. According to the university the Centre arranges regular seminars for PhD, Masters students as well as academic staff. These have contributed to sharing research information and experience as some supervisors who usually attend come from partnering academic institutions.

The Centre produces quarterly newsletter to inform the public and stakeholders about the Centre's activities, this is shared via emailing, social media, and websites.

Experts' evaluation

a) Evaluation in 2022

Access to information via the UR website

Usually, the websites provided by the respective university or faculty are prospective students' first points of contact. At https://ur.ac.rw/ you can access the College of Education via Admission -> Post-graduate. Initially, there is no explicit/clear reference to the degree programmes to be accredited here.

The alternative path URColleges -> Academic Programmes provides a complete listing of all programmes offered. Unfortunately, the submenus for the programmes do not contain any further information on the programmes (as an example here Master of Education (Biology Education)). The relevant pages indicate 27 November 2019 as the last update date.

The same applies to the PhD in Science Education programmes (see example). No further programme information is provided.

Access to information via alternative channels

In the course of the inspection, in the context of the interviews conducted, it was established that information on the programmes to be accredited here is communicated to students in an intra-university context, e.g. through personal conversations with lecturers during the Bachelor's or Master's degree programmes.

Whether other information channels (press, radio, television) or, e.g. information events, university excursions and university-guided tours are used in the context of study and career counselling at secondary schools could not be established on the basis of the information available to us.

The information provided to students already enrolled in the programmes on the administrative and content-related structure is adequate overall.

Intended learning outcomes

No information on this is available to the general public, based on the evidence provided to us or available on the website.

Within the faculty, information regarding the modules to be taken, their contents and the results to be achieved are available to the students in an appropriate form.

Selection procedure

The admission requirements are listed on the website.

Concerning the requirements concerning language skills, the wording "sufficient ability" seems somewhat vague to the experts.

More detailed information on this subject can be found in the following section.

Further down on the same page, additional information is given, and the link to an (unknown) download does not work.

No information is given on the number of places available and what criteria, if any, will be used to select applicants if courses are oversubscribed.

Concerning tuition fees, a fee overview dated 16 July 2019 can be found. It is not clear whether these are the current fees for 2022. It is also unclear which fees are non-recurring and which are annual fees.

Financial assistance programmes mentioned during the interviews do not reflect in any publicly accessible information.

Qualification awarded

The qualifications associated with completing the programmes to be accredited here are not explicitly listed but result logically from the name(s) of the programme(s). Information on the qualifications' national, regional or international recognition could not be verified.

Under Research, the website has an entry dated 18 December 2019, which provides no substantive information other than a general statement on the role of research.

Further information on study and research content, examination modalities, and assessment procedures are not publicly available.

Within the faculty, information regarding study and research content or examination modalities and assessment procedures are available to the students in an appropriate form. Within the framework of the accreditation inspection and the document study, it has been established that the available information is prepared and published impartially and objectively. Within the College of Education, information is updated from time to time by the administration and / or academic staff.

A systematic structure of updating information is not apparent nor documented in corresponding operational procedures and workflows. The publicly accessible information is primarily incomplete, sometimes unavailable, scattered among different sources, not recognisably synchronised and often outdated.

Several links on the School of Education website, which could provide further information on the programmes (e.g. School handbook or School timetable), do not contain any entries (screenshot https://ce.ur.ac.rw/School-Timetable attached). There are no entries in the student portal on the website.

The access to the website is generally acceptable, although it sometimes takes relatively long to load the individual pages. In summary, the information available on the website regarding the programmes to be accredited here on the contents of the programmes, access to the programmes, assessment and financing is still insufficient and does not yet meet international minimum requirements. Information channels outside the website are currently hardly and not systematically used.

To enhance the public information for the programmes, the panel of experts believe that a strategy considering the following points should be created and fully implemented (old Finding 41):

- Create an information strategy that is addressee-specific and up-to-date and synchronised information, e.g. by cross-linking on the website (old Finding 41a).
- Create and implement a systematic update cycle for information, e.g. annual update for tuition fees, with responsibilities defined, including controlling (old Finding 41b).
- In addition to general information on application, enrolment, selection procedures and fees, there should be a specific overview for each degree programme in a document that addresses the above-mentioned information categories (old Finding 41c).
- Another focus could be public relations work concerning internet-independent information channels, e.g. regular articles in newspapers, specialist journals, talk shows on television, information events in secondary schools, and suggestion of setting up a nationwide study and career guidance programme (old Finding 41d).

b) Reconsideration evaluation in 2025

A Communication Strategy has been developed and is being utilized.

Conclusion

The criterion is fulfilled.

- **Recommendation of the panel of experts**

The panel of experts recommends accrediting the study programme "**Master of Education in Biology Education**" offered by the University of Rwanda with conditions.

The panel of experts recommends accrediting the study programme "**Master of Education in Mathematics Education**" offered by the University of Rwanda with conditions.

The panel of experts recommends accrediting the study programme "**Master of Education in Physics Education**" offered by the University of Rwanda with conditions.

The panel of experts recommends accrediting the study programme "**Master of Education in Chemistry Education**" offered by the with conditions.

The panel of experts recommends accrediting the study programme "**PhD in Biology Education**" offered by University of Rwanda with conditions.

The panel of experts recommends accrediting the study programme "**PhD in Mathematics Education**" offered by University of Rwanda with conditions.

The panel of experts recommends accrediting the study programme "**PhD in Physics Education**" offered by University of Rwanda with conditions.

The panel of experts recommends accrediting the study programme "**PhD in Chemistry Education**" offered by University of Rwanda with conditions.

Findings:

1. a. There needs to be a curriculum alignment regarding the LOs, content areas, teaching and learning strategies and assessment strategies for each module.

   b. The literature suggestions for each module have to be updated.
2. The university should consider the inclusion of non-credit modules to deal with the changing needs of the society and the global trends in the education sector.
3. The university should define how a part-time study can be absolved by its students. UR should develop a study learning plan for this programme that addresses the part-time students' needs.
4. Evidence regarding a proper Documentation Centre has to be submitted. Furthermore, how information from alumni and other stakeholders are incorporated in reviewing curricula should be more detailed.
5. UR should provide further evidence in respond to the finding regarding specially designed didactic modules.
6. A recognition of Prior Learning Policy should be developed.
7. An issue of diploma to those students who have not completed the whole programme but have completed a substantial part of it as an exit point should be considered. These should be clearly detailed in the programme handbook.
8. UR has to provide more details on a university workload policy to monitor the workload of the teaching staff.
9. UR has to provide evidence that trial runs prior to the actual practicals are being conducted and also recorded.