ASIIN Seal

Accreditation Report

Master's degree program
One Health Molecular Biology

Provided by
Sokoine University of Agriculture

Version: 22 March 2024

Table of Content

A About the Accreditation Process

Name of the degree program (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
One Health Molecular Biology	/	ASIIN	/	**10**, 14
Date of the contract: 24.11.2022 **Submission of the final version of the self-assessment report:** 23.08.2023 **Date of the onsite visit:** 21./22.11.2023 **at:** Sokoine University of Agriculture, Morogoro, Tanzania				
Peer panel: Prof. Dr. Alois Palmetshofer, University of Würzburg (Germany) Prof. Dr. Markus Schnare, University of Marburg (Germany) Dr. Anchindika Tabo Mugala, University Teaching Hospital, Ministry of Health (Zambia) Mr. Victor Kiplangat Rotich, Jomo Kenyatta University of Agriculture and Technology (Kenya)				
Representative of the ASIIN headquarter: Sophie Schulz				
Responsible decision-making committee: Accreditation Commission				
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015 Subject-Specific Criteria of Technical Committee 10 – Life Sciences as of June 28, 2019				

[1] ASIIN Seal for degree programs
[2] TC: Technical Committee for the following subject areas: TC 10 – Life Sciences, TC 14 – Medicine

B Characteristics of the Degree Program

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[3]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
One Health Molecular Biology	Master of Science (M.Sc.)	/	7	Full time	/	4 semesters	180 ECTS	Annually, October 2010

[3] EQF = The European Qualifications Framework for lifelong learning

C Expert Report for the ASIIN Seal

1. The Degree Program: Concept, content & implementation

Criterion 1.1 Objectives and learning outcomes of a degree program (intended qualifications profile)

Evidence:

- Learning objectives and learning outcomes
- Objectives matrix
- Module descriptions
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
Sokoine University of Agriculture (SUA) has described program objectives and program learning outcomes for the Master of Science in One Health Molecular Biology. The program focuses on practical skills and a thorough understanding of how to apply molecular biology to One Health, an emerging discipline that promotes collaboration between specialists in the public, animal and environmental/ecosystems health sectors. The program aims at training students in advanced knowledge and tools for pathogen investigations and offers an opportunity through molecular biology to meet the challenges of infectious diseases through the One Health approach.

The experts approve that a detailed presentation of learning outcomes and competence profiles is given in combination with a learning objectives matrix matching the described learning outcomes with the respective modules of the program. The experts acknowledge that updating the qualification objectives and learning outcomes and their relevance for the labor market is considered crucial at SUA, which guarantees that students are trained in conjunction with the demand and relevance of the labor market. In this regard, they welcome that external stakeholders (mostly partners from other universities or research institutes) are consulted for the continuous further development of the curriculum. Informal tracer surveys indicate that most program graduates are competitively accepted and absorbed in academic and research institutions within the country and the region, while a

few graduates secure competitive scholarships from abroad for further training at PhD level.

According to the self-assessment report, the overall objectives of the Master of Science in One Health Molecular Biology program are:

- To train a new generation of health professionals with competence in detection, identification, surveillance and control of conventional, emerging and re-emerging infectious diseases of humans, animals and the environment,
- To equip the graduates with a system thinking approach for policy and priority-setting of relevance to one health,
- To impart specialized knowledge and practical skills in one health for the development of newer life science services and technologies, and
- To produce a cadre with the ability to operate collaboratively between different sectors.

In the experts' opinion, the objectives of the degree program are clear, plausible and cover all aspects that can be expected from a program in this field. They learn that the graduates of the program are much sought after in the labor market, both in the academic/research sector and in industries. Overall, the experts confirm that the degree program and its objectives adequately reflect level 7 of the European Qualification Framework (EQF). The program objectives and learning outcomes are consistent with the ASIIN Subject-Specific Criteria of the Technical Committee 10 – Life Sciences. They aim at the acquisition of specific competences and are well anchored, binding and easily accessible to all stakeholders.

The experts summarize that SUA offers a highly developed master program with a very good focus on One Health issues. The program has continuously been developed and improved over the last decade to result in a program fulfilling the quality criteria of a modern study program with state of the art research related teaching and learning. Finally, yet importantly, the experts highlight that the (regional) relevance of this program and the focus on infectious diseases are beyond doubt, given that Africa has the highest burden of infectious diseases in the world and yet possesses the least capacity for their risk management.

Criterion 1.2 Name of the degree program

Evidence:

- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
The experts consider the name of the degree program to be adequately reflecting the aims, learning outcomes, and curriculum as well as the course language (English).

Criterion 1.3 Curriculum

Evidence:

- Curricular overview and study plan
- Objectives matrix
- Module descriptions
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
The curriculum of the program is designed to comply with the program objectives and learning outcomes, and is subject to continuous revision processes to ensure that the contents taught are up to current requirements and adequately reflect the fast technological and scientific progress in the field. A detailed overview of the curriculum can be found in the appendix of this document.

The MSc One Health Molecular Biology program comprises two years of study (or four semesters, respectively) of which the first year is dedicated to coursework, while during the second year, the students are expected to conduct research and write the dissertation (final thesis). In the first year, courses are distributed over two semesters and are designed to guarantee that each course contributes to achieving the intended learning outcomes. Each semester consists of both mandatory core courses as well as electives. During the second semester of year one, the students already start to develop research proposals for the final thesis. After analyzing the module descriptions and the study plan, the experts confirm that the degree program under review is divided into modules (courses) and that each module is a sum of coherent teaching and learning units. The program allows the students to define individual focuses through the integration of elective modules. The students confirm that the structure of the program allows them to reach the learning outcomes within the regular duration.

The program under review was the first One Health Molecular Biology degree program in Africa and has been designed to provide superior graduate-level education for careers in both innovative research and development and in industries. The experts note that the curriculum reasonably integrates and combines theoretical and practical aspects, along

with research that is completed with the final thesis at the end of the studies, guaranteeing that graduates emerge with a comprehensive skill set and knowledge base.

Overall, the experts have a very good impression of the curriculum. By thoroughly analyzing the module descriptions and following the discussions during the on-site visit, they state that the program is coherent, well-structured and covers the essential topics in the field, enabling also an individual profile building through various elective courses. With the curriculum at hand, the experts are convinced that the graduates of the program will be highly qualified professionals with the knowledge and practical skills required to resolve origins, context and drivers of conventional, emerging and re-emerging infectious diseases of humans, animals and the environment. They will also have the competence in monitoring, surveillance, modelling, diagnosis, prevention and control of infectious diseases.

Mobility

SUA follows an internationalization strategy and aims at increasing the number of international students in the upcoming years. The program under review hosts students and graduates from ten different African countries. Students enrolled in the program are allowed to transfer to another institution. An exchange is ideally carried out during the second year of studies, during which the students work on their dissertations. The experts learn that during an exchange, two supervisors are available to the student, one at the home institution and one at the host institution. Strategic student placement for a short duration of three to six months at partner institutions to conduct research in order to achieve certain research objectives is carried out and encouraged by the university according to the self-assessment report. For example, four students conducted their research at the National Institute for Communicable Diseases in South Africa in 2015 that led into a publication. Other partner institutes are the University of Zambia, the Malawi-Liverpool-Wellcome Trust Clinical Research Programme and the Vector Borne Disease Laboratory of the University of Malawi, and the Muhimbili University of Health and Allied Sciences in Tanzania.

During the on-site visit, the experts learn that currently though, only very few students (and also teachers) take the opportunity to spend a placement or research stay abroad. The reasons for the low numbers are manifold, but it is mainly due to a lack of interest and insufficient information about partner organizations and funding opportunities. The experts, therefore, recommend further promoting the different opportunities for mobility and encouraging students and teachers alike.

Criterion 1.4 Admission requirements

Evidence:

- Self-assessment report

- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
For admission into the program, applicants must have attained at least level 8 of high education training levels and hold a bachelor's degree in Molecular Biology or other Biological Sciences from SUA or any other recognized institutions provided that the candidates possess a pass grade (B) or above in Molecular Biology. In addition, candidates must prove knowledge of written and spoken English as well as computer literacy.

After reviewing the documents, the experts notice that the defined admission requirements are rather unspecific. For example, there do not seem to be any detailed subject-specific prerequisites for admission to the degree program. Other than indicating the discipline (Molecular Biology or other Biological Sciences), it is not defined what prerequisites students must have (e.g. in the fields of immunology, virology, microbiology), which means that in theory, a student with a lack of relevant prior knowledge could apply for the program and not be rejected. Moreover, from the official documents and discussions on-site, it remains unclear what the precise qualification and selection criteria for the selection of applicants look like, how missing prior knowledge can be compensated, and who/which decision-taking body decides about the selection and enrollment of applicants.

The experts thus urge SUA to clearly define subject-specific admission requirements, and in particular rules for the compensation of missing admission criteria. This also includes the introduction of a responsible decision-making body.

Criterion 1.5 Workload and Credits

Evidence:

- Module descriptions
- Curriculum
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
The program under review uses a credit point system in order to quantify and standardize the workload for each course. In total, the program comprises 180 credits, with each credit corresponding to 10 hours of study. When allocating the credits to the respective module, the cumulative time spent in lectures, practical sessions, assignments, seminars as well as self-study time are taken into account. The minimum amount of coursework to be completed in the first year of study is 120 credits, which includes all core courses and selected electives. In all subjects, coursework accounts for 50% of the overall grade, and end-of-

study examinations account for 50% of the grade. The research component during the second year, which culminates in the dissertation comprises 60 credits. Successful completion of all core and elective courses and submission of a dissertation qualifies the candidate for the award of the master degree.

During the on-site visit, the experts discuss the workload of the program in detail with all different stakeholders. They note that the workload is rather unbalanced (120 credit points in year one and only half of it in year two), and that the credit points overall do not adequately reflect the workload if one credit point corresponds to only 10 hours. This is particularly striking during the first year of the studies, where the students take many courses that cover many different and demanding topics. Yet, for most of the courses, SUA has allocated only 10-20 hours of self-study time, which does not seem to reflect reality in the experts' opinion. Students and staff members alike confirm that the workload is generally considered very high. It also remains unclear if and how it is systematically and regularly monitored whether the credits awarded for each module correspond to the actual student workload. The experts, therefore, ask SUA to reconsider the average student workload and ensure that self-study times are reasonably reflected on the one hand, and to introduce mechanisms to monitor the actual student workload on the other (cf. criterion 5).

Criterion 1.6 Didactics and Teaching Methodology

Evidence:

- Module descriptions
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
From the presented material as well as the discussions on-site, it becomes apparent that pedagogical skills and adequate teaching methodology are highly valued at SUA and in the program under review. The pedagogical skills and teaching performance are also a key factor in the evaluations that SUA carries out for the individual courses.

Teaching is usually done in the form of lectures, seminars, tutorials, assignments, and practical work. SUA approves face-to-face instruction as the primary teaching method. Indeed, during the discussions on-site, the experts get the impression that classical teaching methods, in particular lectures and seminars, are the main means of teaching in the program under review. Although the experts acknowledge that other teaching methods are increasingly integrated, they learn that most staff members do not yet make regular use of modern and student-centered methods (e.g. flipped classroom). Thus, they encourage SUA and the teaching personnel involved in the program to introduce more student-centered teaching

methodologies in the future. With an average class size of ten students, they also highlight that this can be implemented particularly well in the One Health program.

Overall, the teaching methodology is considered adequate in order to convey the contents envisaged by the program.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 1:

The experts consider criterion 1 to be mostly fulfilled.

2. Exams: System, Concept and Organization

Criterion 2 Exams: System, concept and organization

Evidence:

- SUA Regulations and Guidelines for Higher Degrees
- Module descriptions
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:

At SUA, assessment is conducted according to SUA Regulations and Guidelines for Higher Degrees. The assessment system at SUA has two purposes: a formative and a summative purpose. The formative assessments (also called course assessments) are used by the lecturer to continuously monitor the progress of achieving the course objectives and usually take place in the middle of the semester. Typical forms of continuous monitoring are written tests, assignments and seminars or a combination thereof. The summative assessments take place at the end of the semester and are used to display whether the course objectives have been met at the end of each course. Thus, examinations take place at least two times during a semester. The dissertation is examined by an external examiner and two internal examiners and reports are sent to the host department through the Directorate of Postgraduate Studies and Research.

The experts as well as the students welcome the continuous learning assessment as it not only allows a close monitoring of the students' learning progress but also encourages stu-

dents' motivation throughout the semester. By way of helping students to consciously assess their actual state of knowledge, the assessment procedure at the same time contributes to an adequate exam preparation.

The organization of the exams guarantees examinations that avoid delays to students' progressions. The written tests and end of semester examination questions are moderated by internal examiners within the department under the supervision of the Head of the Department. All timetables and schedules are prepared within the department and circulated to students through the university website and also students' leadership. The relevant rules for examination and evaluation criteria are transparently put into a legal framework, as both students and lecturers confirm in the audit discussions. All final exams take place within a certain timeframe at the end of each semester. This timeframe (exam week) and a detailed schedule are published in the University Almanac and communicated in due time to inform about the exact time and date when each exam takes place.

During the on-site visit, the experts were provided with a selection of exams and final theses to check. The experts note that the requirements and standards of the exams and dissertations reflect an adequate scientific level and represent an adequate level of knowledge as required by EQF level 7. They particularly highlight the good organization, scientific level, and professional as well as societal relevance of the final theses and that students are given the opportunity to visit specific laboratories for hands-on research activities. Studies on different topics alone in the final theses show a broad research interest at SUA.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 2:

The experts consider criterion 2 to be mostly fulfilled.

3. Resources

Criterion 3.1 Staff and Development

Evidence:

- Staff handbook
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:

Staff

In the self-assessment report, SUA presents data about the number and overall qualification of staff for the program under review and during the discussion on-site, the experts gain a good impression of the quality of the teaching personnel. The College of Veterinary Medicine and Biomedical Sciences, where the One Health program is accommodated, has a total of 78 academic staff and 31 technical staff distributed within five academic departments. In terms of academic ranks, the College has 20 professors (12 full professors and 8 associate professors), 10 senior lecturers, 20 lecturers, 9 assistant lecturers and 18 tutorial assistants. SUA also provides the CVs of the ten staff members, who are actively and permanently involved in the teaching of the MSc. One Health Molecular Biology program.

On the basis of these document and the discussions on-site, the experts learn that the academic staff is actively involved in research projects, which results in a reasonable number of publications per year. SUA positions itself as a university with a strong research focus, which the experts highly appreciate. They also welcome that students can contribute to and are actively integrated in research projects, in particular during the process of writing the final thesis.

Overall, the experts highlight the well-qualified and engaged staff members and confirm that the composition and scientific orientation of the teaching staff are suitable for successfully implementing and sustaining the degree program. The experts also acknowledge the open-minded atmosphere among students and staff members. Both confirm that in case of questions or problems, there is always an academic advisor available to solve the issues together with the student.

Staff development

In order to ensure the continuous further development of its staff members, SUA offers different kinds of trainings on a regular basis. The teaching staff is encouraged to study abroad or to participate in international research projects and conferences in order to enhance their knowledge and to build international networks. Staff capacity development is defined in the university's Staff Training and Development Policy and Guidelines. According to this, SUA staff members are trained at various education levels through resources and opportunities acquired by the university. The current World Bank's Higher Education Economic Transformation (HEET) program has set aside a total of US$ 32,000,000 for improving teaching and learning environment out of which US$ 2,537,500 has been set aside for building capacity of academic staff and leaders of SUA. Training courses are aimed at research skills as well as the introduction of new teaching methods and pedagogical/didactical approaches in order to improve the quality of teaching. During the on-site visit, the

experts also learn that a special training is mandatory for new employees before they actually start teaching.

In summary, the experts appreciate the university's efforts in the further development of its employees and consider the support mechanisms for the continuing professional development of the teaching staff adequate and sufficient.

Criterion 3.2 Funds and equipment

Evidence:

- Self-assessment report
- Discussions during the on-site visit
- Inspection of laboratories and other facilities during the on-site visit

Preliminary assessment and analysis of the peers:
In the self-assessment report, SUA gives a detailed overview of its financial and material resources, the available technological infrastructure and existing cooperation agreements that facilitate the implementation of the study program. The program was set-up as part of the Wellcome Trust Grant (WT087546) titled "One Medicine Africa-UK Research Capacity Development Partnership Programme for Infectious Diseases in Southern Africa'' funded between August 2009 and December 2017. The aims and objectives of the Wellcome trust grant included enhancing institutional capacity for detection, identification and monitoring of infectious diseases of both humans and animals; biosafety and quality management; skills through taught and distance-learning programs and through research apprenticeships (PhD and Postdoctoral fellows). Through the Wellcome Trust Grant, a total of 36 scholarships for the One Health program were provided to nationals from different African countries. Since 2017, the program has been funded through the Africa Center of Excellence (ACE) from a variety of sources including for example the World Bank, the Tanzanian government, the African Development Bank, the Wellcome Trust, the International Development and Research Centre (IDRC) of Canada, and the European and Developing Countries Clinical Trial Partnerships (EDCTP).

During the on-site visit, the experts gain a comprehensive impression of SUA's facilities and laboratories. They are convinced that the teaching/learning and office facilities are sufficient for all students and staff members for the conveyance of the program's fundamentals. The experts are particularly impressed by the scientific equipment available in the laboratories and consider the university's labs to be of highest standard. The available infrastructure allows for intense research and the implementation of projects on the academic level envisaged by the program and beyond. They also confirm that the laboratories adhere to the international safety standards.

Despite the excellent equipment in the laboratories, the experts recognize a need for improvement in the basic equipment of the university during the visit of the premises. This concerns in particular access to WiFi and computers – which is still restricted to certain classrooms – and to current scientific research, as licenses for academic journals and online sources are still limited. Students and staff members alike also clearly express a wish for more computers, better WiFi connections, and access to academic literature. The experts understand this well and strongly recommend improving the basic equipment here in future.

In summary, the experts are convinced that the current funding allows for maintaining and further improving the standards and that SUA generally holds enough workspaces with adequate equipment.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 3:

The experts consider criterion 3 to be mostly fulfilled.

4. Transparency and documentation

Criterion 4.1 Module descriptions

Evidence:

- Module descriptions
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
SUA presents module descriptions for all modules offered in the program under review. The experts confirm that they include all necessary information about the persons responsible for each module, the teaching methods and workload, the credit points awarded, the intended learning outcomes, the applicability, the admission and examination requirements, and the forms of assessment as well as details explaining how the final grade is calculated.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Sample Diploma

- Sample Transcript of Records
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
With the successful completion of their studies, the students receive a graduation certificate and a transcript of records. However, by the time of the on-site visit, diploma supplements are not yet issued to the graduates. Thus, the experts ask SUA to do so in the future.

Criterion 4.3 Relevant rules

Evidence:

- Examination and study regulations
- Official regulations for admission
- Policies and guidelines
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
From the documents provided and the discussions during the on-site visit, the experts learn that SUA follows a policy of transparent and open rules and regulations. All required rules and regulations are made accessible to students. The discussion with the students confirmed that they feel well informed about regulations and comfortable about the access to any information about their degree program.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 4:

The experts consider criterion 4 to be mostly fulfilled.

5. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- SUA Quality Assurance Policy
- Self-assessment report

- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
From the documents presented and from the discussions during the on-site visit, the experts overall agree that there is a well established quality assurance system in place, which, however, still has shortcomings. The QM system consists of committees ranging from the departmental level up to the college/school/center/institute/directorate level and university level. Students are represented in all QM committees and in all SUA decision-making bodies.

The reliance on student feedback and the necessity to ensure and improve the quality of the graduates are of great importance to SUA. Each course is being evaluated constantly through different surveys by students. Further surveys are carried out gathering statistics about graduates and alumni. However, during the discussions on-site, the expert get the impression that evaluations are not yet systematically carried out and that the surveys lack important indicators, as they are primarily focused only on the teacher performance as such. The experts point out that the primary focus of the evaluations should be the contents and the overall mode of presentation rather than the teachers themselves. They also highlight again that the evaluation surveys must include questions on the workload in order to ensure a continuous monitoring and realistic reflection of the actual workload (cf. criterion 1.5). Moreover, the experts learn from all stakeholders that the evaluation results are not discussed with the students in class, which leaves the feedback loop effectively open. The experts gain the impression that students are generally outspoken at SUA and that, given the general small sizes of the classes, they contact their teachers directly in case of criticism. Nonetheless, the experts are of the opinion that SUA must improve its quality management system by making sure that evaluations follow a systematic approach (regular implementation, meaningful surveys, relevant content, derivation of measures for improvement) and that the results are followed up and communicated to all stakeholders, in particular the students.

The MSc One Health Molecular Biology program undergoes a periodic review to ensure that it remains in line with the intended outcomes and needs of the labor market and the research community. This review is becoming increasingly important due to rapid changes in industry demands, advancements in technology, evolving job market trends, or feedback from employers and students. Stakeholders frequently collaborate to assess the effectiveness of the current curriculum and make any required adjustments to better align with the desired competence. The industry representatives present during the on-site visit confirm that the university is eager to receive feedback about new developments and trends and

the employability of their graduates. That this process is fruitful and effective becomes visible in the high percentage of graduates that find employment immediately after graduation. The experts appreciate this very much, and suggest maintaining and improving the connection to the industry and to other research institutions in the future, also outside Tanzania. This wish was also clearly expressed by the students, who would welcome closer collaborations with other universities (outside the country), in particular in the area of research.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 5:

The experts consider criterion 5 to be mostly fulfilled.

D Additional Documents

No additional documents needed.

E Comment of the Higher Education Institution (24.02.2024)

SUA Morogoro provides the following statement:

“The Sokoine University of Agriculture (SUA) is a Tanzanian public University that was established by Act No. 6 of 1984. Currently the University operates under the Universities Act No. 7 of 2005 and SUA Charter and Rules of 2007. SUA is named after the late Prime Minister of Tanzania, Edward Moringe Sokoine, who passed away on 12th April 1984 in a road accident in Morogoro. The Edward Moringe (Main Campus) where the College of Veterinary Medicine and Biomedical Sciences is found, is located on the slopes of the Uluguru Mountains, in Morogoro, Tanzania. More information is available on the University prospectus at https://www.sua.ac.tz/study/prospective-students/prospectus

The University has five campuses namely, Edward Moringe Campus (2,376 ha) and Solomon Mahlangu Campus (1,050 ha) both in Morogoro, Olmotonyi Campus (840 ha) in Arusha, Mazumbai Campus (320 ha) in Tanga Region, Mizengo Pinda Campus in Katavi Region (64 ha) and Tunduru Campus (509 ha) in Ruvuma Region. In addition, SUA has sites for students’ field practice in Mbinga, Ruvuma Region; Mgeta (Nyandira), Morning side and Kitulanghalo Forest in Morogoro Region.

The University has five campus colleges and two schools, namely the College of Agriculture; College of Forestry, Wildlife and Tourism; the College of Veterinary Medicine and Biomedical Sciences; the College of Natural and Applied Sciences; the College of Economics and Business Studies; School of Engineering and Technology; and School of Education. These colleges offer various degree and non-degree programmes which lead to the awards of PhD, Masters, Bachelor degree, Diploma, and Certificate qualifications.

Our Vision: To be a leading University in the provision of quality knowledge, skills and innovations in agriculture and allied sciences.

Our Mission: To undertake training, research in agriculture and allied sciences and deliver highly competitive outputs that contribute to national, regional and global socio-economic development.

Our Values: Effectiveness, efficiency, pursuit of excellence, creativity and innovativeness, equality and social justice, integrity, transparency and accountability.

Morogoro is located in the eastern part of Tanzania, 196 kilometres west of Dar es Salaam, the country's largest city and commercial Centre, and 260 kilometres east of Dodoma, the country's capital city.

Sokoine University of Agriculture's Edward Moringe campus (main campus) is located on the slopes of Uluguru Mountains in the Morogoro Region at an altitude of about 500 - 600 metres above sea level and receives an average annual rainfall of between 600 and 1000 mm.

Solomon Mahlangu Campus (SMC) of Sokoine University of Agriculture, which has a rich history of hosting freedom fighters from South Africa under the African National Congress (ANC), is located in Mazimbu area about 10 kms from the main campus.

Morogoro is a centre of agriculture and the national food basket of Tanzania. Morogoro boasts several attractive places where one can visit and explore the beauty of life, there are several good places where one can dine and have an unforgettable taste of traditional cuisine and places where one can visit and write a new history of life. Some of the best places for outdoor activities found in Morogoro include Selous Game Reserve, Uluguru Mountains, Kinole Waterfalls, Mikumi National Park, and the Morning Side. Mikumi National Park, which is about 118 km from Morogoro centre is the home to the most spectacular wildlife species including Lion, Buffalo, Giraffe, Wilde beast, Zebra, Impala, Warthog, Elephant, Hippo and more than 300 bird species and diverse plant species. There is a wide range of activities to choose from mountain hiking, safaris, bird watching and trekking. While you are in Morogoro for your enjoyment, you can access several health centres available in the municipality. This will ensure that you have an uninterrupted exploratory tour of the region, which is rich in culture and entertainment.

Sokoine University of Agriculture has a conducive environment for teaching and learning. In all teaching venues, there are modern facilities such as LCD projectors, projection screens, whiteboards, public address systems, smart boards and many more that support one’s academic pursuits.

Library Services: Established in 1991, The Sokoine National Agricultural Library (SNAL) is located at the Edward Moringe Campus as well as Solomon Mahlangu Campus. It is the single largest agricultural library designated to serve the University and agricultural community in Tanzania. The activities of SNAL are geared towards supporting teaching and research activities of the University through the provision of books, periodicals and other reading materials to the University staff and students. SNAL resources are open not only to members of the University community but also to other people engaged in research on various Government and non-Governmental projects in the country and scholars from all over the world. Find out more: https://www.lib.sua.ac.tz

ICT Services: The Directorate of Information and Communication Technology (DICT) provides extensive and reliable IT services, maintains computer laboratories, and offers technical support to students and staff at Sokoine University of Agriculture.

DICT ensures that University has a wide computerization system in order to support the main role of the University in research, teaching, consultancy, library, and administrative activities. Find out more https://www.dict.sua.ac.tz

Laboratories: SUA has various laboratories for teaching, research and consultancy activities. Our laboratories are found in different buildings in all the campuses. The University has recently constructed a new Multipurpose Laboratories Building at Edward Moringe Campus and Science Laboratory at Solomon Mahlangu Campus in Mazimbu. Our laboratories are equipped with modern and advanced equipment and well-qualified laboratory personnel.

Housing and Accommodation: The University Housing and Accommodation Bureau (SUA-HAB) offers accommodation services to students in hostels available on all campuses. Students are either accommodated in the Hostels or find their own accommodation outside the campus. Students who are accommodated in hostels are obliged to pay accommodation fees at an authorized rate. For more information, visit https://www.pfa.sua.ac.tz/sua-hab

International Students: Sokoine University of Agriculture (SUA) welcomes international students to apply for various undergraduate and postgraduate degree programmes offered at the University. Studying at SUA is a great way of experiencing the Tanzanian lifestyle, exploring the beauty of the country, and making new friends, while at the same gaining knowledge for your degree qualifications. During the academic year 2022/23, the University has 102 foreign students (23 undergraduate and 79 postgraduate students) coming from 22 countries including Botswana, Germany, Liberia, Lebanon, Slovenia, Burundi, Cameron, Ethiopia, Kenya, Malawi, Mozambique, the Comoros Islands, Zimbabwe, Lesotho, Namibia, the Democratic Republic of the Congo, Nigeria, Ghana, Rwanda, South Sudan, Uganda, Zambia and many more. Find more at: https://www.arc.sua.ac.tz/international

The SACIDS Africa Center of Excellence for Infectious Diseases of Humans and Animals in Southern and East Africa (SACIDS-ACE) provides the following statement:

SACIDS-ACE is hosted at the SACIDS Foundation for One Health (https://sacids.org) of SUA, an African One Health Institution set by African scientists to develop Africa's capacity for prompt detection, identification and risk management of infectious diseases (including anti-microbial resistance) in people and animals.

The SACIDS Foundation for One Health (SACIDS) was founded as a One Health virtual centre in January 2008, by universities and national research institutions that deal with infectious diseases of humans and animals within the SADC region of Africa. Sokoine University of Agriculture was peer-elected to host SACIDS. The founder institutions in Tanzania include the Tanzania National Institute for Medical Research and the Muhimbili University of

Health and Allied Sciences, as well as the South African National Institute for Communicable Diseases.

Other founding members are in Tanzania – Catholic University of Health and Allied Sciences; in the Democratic Republic of Congo – University of Kinshasa (Faculty of Medicine), the National Institutefor Biomedical Research and the Central Veterinary Laboratory; in Zambia – the University of Zambia (Colleges of Veterinary Medicine and Public Health); in Mozambique – the National Institute of Health and the Eduardo Mondlane University (Faculties of Veterinary Medicine/Public Health); in South Africa – the ARC Onderstepoort Veterinary Institute and the universities of Pretoria (Faculty of Veterinary Science) and Stellenbosch (Medical School). The external Smart Partner founder institutions were the London School of Hygiene and Tropical Medicine and the Royal Veterinary College, UK.

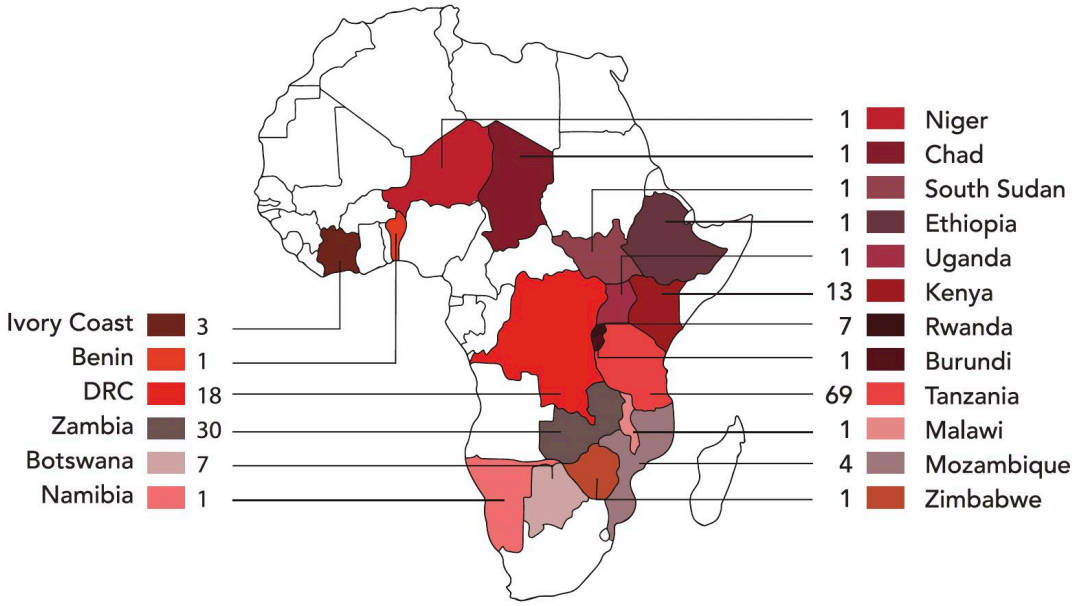
The original mission of SACIDS was to improve Africa's capacity to detect, identify and monitor infectious diseases of humans and animals and their interactions, within the African ecosystems, in order to better manage the risk posed by them. With the transformation of SACIDS into an institute status, designated by the World Bank as an Africa Centre of Excellence for Infectious Diseases of Humans and Animals in Eastern and Southern Africa, and taking into account experiences from the COVID-19 pandemic as well as increasing necessity to provide expertise and services to national and regional/Africa continental organisations, the programme of SACIDS is evolving into two streams: (i) SACIDS One Health Research and Research Capacity Development; and (ii) SACIDS One Health Social Enterprise to focus on Outreach and Service Provision (i.e. 3-Ps: Products, Policy and Practices).

Both strands are driven by the SACIDS vision of a sub-Saharan African society protected from devastating infectious diseases affecting the health of humans, animals (i.e. both terrestrial and aquatic), and ecosystems, thereby promoting livelihoods, socio-economic development including market access and the environment. Central to this stream is the SACIDS Africa Centre of Excellence for Infectious Diseases, whose primary goal is to develop Africa's capacity for innovations and research that will transform Africa.

Therefore, SACIDS will be recognised and respected as having unique world-class expertise, facilities and collaborations for vital One Health research, capacity-building and translation to impact in communities within Southern African countries. Accordingly, the mission for this SACIDS Research and Research Capacity Development is to undertake cutting-edge, transdisciplinary and multi-sectoral research that is impact-orientated, prioritised and system-based. This will be undertaken in Southern, Central and East Africa, and – where appropriate – delivered through strategic partnerships with academia, research institutes and international organisations.

The SACIDS research and training is implemented through three core competencies, hypothesis-based and discovery-oriented research programmes on: (i) Digital and Data Sciences; (ii) Genomics and Metagenomics; and (iii) Social Sciences and Systems Analyses. All three core competency approaches target discovery of solutions for addressing infectious disease epidemics and anti-microbial resistance (AMR).

The programme for developing research excellence starts with Research MSc, PhD, Post-doctoral fellowships, Research Leaders and Research Chairs. For example, one of the SACIDS lead scientists has been awarded the Oliver R. Tambo Africa Research Chair in Genomics for Viral Epidemics. Up to 2023, the Research and Research Capacity development programme has resulted in the following human resource direct outputs as of June 2023, which include 22 post-docs; 63 PhDs; 122 MSc/MPhil/MRes; 200 short courses trainees and 440 scientific journal publications. The postgraduate students in the SACIDS Programme are derived from West, Central, Southern and East Africa, i.e. practically from the whole Africa continent (anglophones, francophones and lusophones) (see Figure below).



F Summary: Expert recommendations (04.03.2024)

Taking into account the additional information and the comments given by SUA Morogoro, the experts summarize their analysis and **final assessment** for the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ma One Health Molecular Biology	With requirements for one year	-	30.09.2029

Requirements

A 1. (ASIIN 1.4) Define rules for the compensation of missing admission criteria.

A 2. (ASIIN 1.5, 5) Introduce mechanisms to monitor the students' total workload, including the time needed for self-studies.

A 3. (ASIIN 4.2) Issue a Diploma Supplement, which aligned to the European template, to all graduates.

A 4. (ASIIN 5) Introduce systematic and anonymous evaluations of the courses by the students and ensure closed feedback loops.

Recommendations

E 1. (ASIIN 1.3) It is recommended to introduce more student-centered teaching methods.

E 2. (ASIIN 1.3) It is recommended to better promote students' and teachers' academic mobility.

E 3. (ASIIN 3.2) It is recommended to improve WiFi access as well as access to current scientific literature and publications.

E 4. (ASIIN 3.2) It is recommended to further improve the cooperation with the industry and other research institutions.

G Comment of the Technical Committees (14.03.2024)

Technical Committee 10 –Life Sciences

Assessment and analysis for the award of the ASIIN seal:

It is a procedure at an African Centre of Excellence, which is financed by the World Bank. The Technical Committee supports the four requirements as proposed by the experts, which are typical shortcomings at universities that have no experience with international accreditation. The proposed four recommendations are also supported.

The Technical Committee 10 – Life Sciences recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ma One Health Molecular Biology	With requirements for one year	-	30.09.2029

Technical Committee 14 –Medicine

Assessment and analysis for the award of the ASIIN seal:

It is a procedure at an African Centre of Excellence, which is financed by the World Bank. The Technical Committee supports the four requirements as proposed by the experts, which are typical shortcomings at universities that have no experience with international accreditation. The Technical Committee suggest that requirement A2 be supplemented by a reference to the necessary introduction of a workload-based credit point system. The proposed four recommendations are supported.

The Technical Committee 14 – Medicine recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ma One Health Molecular Biology	With requirements for one year	-	30.09.2029

Requirements

A 2. (ASIIN 1.5, 5) Introduce mechanisms to monitor the students' total workload, including the time needed for self-studies. Award credits based on the students' total workload.

H Decision of the Accreditation Commission (22.03.2024)

Assessment and analysis for the award of the subject-specific ASIIN seal:

The Accreditation Commission discusses the procedure and decides to follow the suggestion of TC 14 to add a second sentence to requirement A 2 in order to make clear that students' workload needs not only to be monitored but that the awarded credits need to be based on the students' total workload. Otherwise, no changes to the other requirements and recommendations are made.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ma One Health Molecular Biology	With requirements for one year	-	30.09.2029

Requirements

A 1. (ASIIN 1.4) Define rules for the compensation of missing admission criteria.

A 2. (ASIIN 1.5, 5) Introduce mechanisms to monitor the students' total workload, including the time needed for self-studies. Award credits based on the students' total workload.

A 3. (ASIIN 4.2) Issue a Diploma Supplement, which aligned to the European template, to all graduates.

A 4. (ASIIN 5) Introduce systematic and anonymous evaluations of the courses by the students and ensure closed feedback loops.

Recommendations

E 1. (ASIIN 1.3) It is recommended to introduce more student-centered teaching methods.

E 2. (ASIIN 1.3) It is recommended to better promote students' and teachers' academic mobility.

E 3. (ASIIN 3.2) It is recommended to improve WiFi access as well as access to current scientific literature and publications.

E 4. (ASIIN 3.2) It is recommended to further improve the cooperation with the industry and other research institutions.

Appendix: Program Learning Outcomes and Curricula

According to the self-assessment report, the following **objectives and learning outcomes** (intended qualifications profile) shall be achieved by the One Health program:

Competence Profile	Qualification Category	Competence in relation to ASIIN-defined SSC
Knowledge	Programme graduates are be able to: 1.0 Demonstrate critical and structured thinking behaviours given different scenarios in the working environment and the society; 2.0 Effectively work as a member of a multidisciplinary team; 3.0 Masters contemporary skills and techniques in conducting high-end	Masters degree in OHMB ensures that graduates: • have acquired advanced knowledge in Molecular Biology and One Health in an interdisciplinary manner;

Competence Profile	Qualification Category	Competence in relation to ASIIN-defined SSC
	research programmes.	• are able to discuss complex life science issues as well as own research results in writing (e.g. Masters thesis, scientific publication); • Acquire competences in systems analytical thinking, capacity for teamwork, ability to communicate, and prepared to take on specialty leadership responsibilities.
Skills	Programme graduates are able to: a) Use specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures; b) Integrate knowledge from different fields/disciplines; c) Use a range of established techniques to initiate or propose solutions to problems arising from a specific context.	
Competence	Programme graduates are able to: a) Reflect critically and creatively on subject-specific theory and application; b) Systematically and creatively deal with complex research issues; c) Design, appraise and make sound judgements using research data and information; d) Communicate research findings to specialist and non-specialist audiences; e) Learn and work independently with minimum supervision, to manage resources effectively and plan career development.	

The following **curriculum** is presented:

COURSE ANTE	COURSE TITLE	NOTIONAL HOURS						CREDITS[4]
		LECTURES	TUTORIALS	PRACTICALS	ASSIGNMENTS	INDEPENDENT STUDY	TOTAL HOURS	
YEAR 1; SEMESTER 1: CORE COURSES								
VM 621	Research Methods	48	20	18	12	22	**120**	**12.0**
VM 622	Statistics and Data Management	35	15	10	20	20	**100**	**10.0**
OMB 601	Advances in One Health	30	10	40	10	10	**100**	**10.0**
OMB 602	Pathogen Molecular Biology	45	10	20	15	10	**100**	**10.0**
OMB 603	Biosafety and Biosecurity	20	10	10	5	5	**50**	**5.0**
YEAR 1; SEMESTER 1: ELECTIVE COURSES								

COURSE ANTE	COURSE TITLE	NOTIONAL HOURS						CREDITS[4]
		LECTURES	TUTORIALS	PRACTICALS	ASSIGNMENTS	INDEPENDENT STUDY	TOTAL HOURS	
VM 623	Advances One Health Approaches and Practices	40	20	20	10	10	**100**	**10.0**
MPF 605	Public Health Systems	30	10	20	20	20	**100**	**10.0**
MAM 612	Emerging and Re-emerging Diseases and Zoonoses	27	18	9	18	18	**90**	**9.0**
MPF 610	Global Health	40	15	15	10	20	**100**	**10.0**
YEAR 1; SEMESTER 2: CORE COURSES								
IPM 600	Research Innovations Management and Commercialization	40	0	20	20	20	**100**	**10.0**
PVM 606	Risk Analysis	15	15	30	7.5	7.5	**75**	**7.5**

COURSE ANTE	COURSE TITLE	NOTIONAL HOURS						CREDITS[4]
		LECTURES	TUTORIALS	PRACTICALS	ASSIGNMENTS	INDEPENDENT STUDY	TOTAL HOURS	
OMB 604	Immunology of Infectious Diseases	45	20	10	15	10	**100**	**10.0**
OMB 605	Molecular Epidemiology	40	20	20	10	10	**100**	**10.0**
OMB 606	Pathogen Evolution and Emerging Infectious Diseases	45	20	10	15	10	**100**	**10.0**
YEAR 1; SEMESTER 2: ELECTIVE COURSES								
MTP 601	Helminthology	30	10	60	10	10	**120**	**12.0**
MTP 602	Protozoology	30	10	60	10	10	**120**	**12.0**
MTP 603	Entomology	30	10	60	10	10	**120**	**12.0**
MAM 602	Advanced Bacteriology and Mycology	40	10	20	10	20	**100**	**10.0**

COURSE ANTE	COURSE TITLE	NOTIONAL HOURS						CREDITS[4]
		LECTURES	TUTORIALS	PRACTICALS	ASSIGNMENTS	INDEPENDENT STUDY	TOTAL HOURS	
MAM 604	Advanced Virology	40	10	20	10	20	**100**	**10.0**
PVM 600	Ecology and Control of Infectious Diseases	35	10	25	10	20	**100**	**10.0**
RESEARCH PROPOSAL DEVELOPMENT								
VM 700	Research Proposal Development	0	20	0	0	130	**150**	**15.0**
YEAR 2								
DISSERTATION DEVELOPMENT								
VM 700	Dissertation	0	0	300	0	150	**450**	**45.0**