



ASIIN Seal & EQAS Food Label

Accreditation Report

Master's Degree Program
Animal Nutrition

Master's Degree Program
Food Science

Provided by
Egerton University

Version: 12 December 2023

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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
Animal Nutrition		ASIIN, EQAS	-	08
Food Science		ASIIN, EQAS	-	08
Date of the contract: 22.11.2022 Submission of the final version of the self-assessment report: 06.04.2023 Date of the onsite visit: 23./24.08.2023 at: Egerton University, Faculty of Agriculture				
Expert panel: Prof. Dr. Bernhard Hiebl, TiHo Hannover; Prof. Dr. Gerhard Schleining, University of Natural Resources and Life Sciences, Vienna; Eng. Anke Weisheit, PHARMBIOTRAC; Sambwe Fundikira, SACIDS PhD student				
Representative of the ASIIN headquarter: Sascha Warnke				
Responsible decision-making committee: Accreditation Commission for Degree Programs				
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015				

¹ ASIIN Seal for degree programmes

² TC 08 - Agriculture, Forestry, Food Sciences, and Landscape Architecture

Subject-Specific Criteria of Technical Committee 08 – Agriculture, Forestry, Food Sciences, and Landscape Architecture as of March 27, 2015	
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B Characteristics of the Degree Programs

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
Master of Science in Food Science	MS Food Science	Food Science	07	Full time		4 semesters	53 Credit Factors	Annually; since 2001
Master of Science in Animal Nutrition	MSc Animal Nutrition	Animal Nutrition	07	Full time		4 semester	63 Credit Factors	Annually; since 1990

For the Master's degree program Food Science the institution has presented the following profile in the self-assessment report:

„The MSc Food Science programme is designed to equip professionals with knowledge and skills essential for transforming the food industry. The respective graduates will be able to use the information on the feeding patterns of communities, thus, informing changes in food processing technologies to meet the quality, safety, and nutrient densities of the food products. Hence, the programme plays a significant role in transforming livelihoods through advanced quality training, research and outreach in food science.

The MSc Food Science programme lays great emphasis on the science behind the various technologies of interest in food science. The students are equipped with Advanced Food Chemistry, Advanced Food Microbiology and Biotechnology and Advanced Principles of Processing and Quality. The programme is meant to produce graduates who understand the science supporting the various processes in foods and their impact on the quality of the final product. “

For the Master's degree program Animal Nutrition the institution has presented the following profile in the self-assessment report:

³ EQF = The European Qualifications Framework for lifelong learning

„ Graduates of the MSc Animal Nutrition programme will be able to use the acquired knowledge, skills, attitude and competencies to:

1. Advance Animal Nutrition training at postgraduate level,
2. Solve the myriad constraints facing livestock industry particularly Animal Nutrition,
3. Set up a system that would enhance upgrading of research capacity of faculties in the related departments,
4. Enhance a locally collaborative network amongst the many players in the field of livestock feeding and nutrition.“

C Expert Report for the ASIIN Seal⁴

1. The Degree Program: Concept, Content & Implementation

Criterion 1.1 Objectives and Learning Outcomes of a Degree Program (Intended Qualifications Profile)

Evidence:

- Self-assessment report
- Diploma Supplement
- Matrices aligning courses and program learning outcomes
- Curriculum review
- Discussions during the audit

Preliminary assessment and analysis of the experts:

Egerton University is one of 35 public universities in Kenya and counts as the oldest higher education institution in the country. It is situated in Njoro in Nakuru County, about 180 km to the West from the capital, Nairobi. Founded in 1939 as a farm school, Egerton University has since been upgraded to an agricultural college in 1950, and was incorporated as a constituent college of the University of Nairobi in 1986. One year later, Egerton University was established as an autonomous institution.

The study programs offered at Egerton University have diversified considerably since its inception, with ten faculties now offering programs from arts and social sciences to engineering and technology. Currently, there are about 18.000 undergraduate students and 560 postgraduates enrolled at Egerton University.

The Master's degree program "Food Science" is designed to equip the graduates with essential skills and knowledge to succeed in working in and transforming the food industry,

⁴ This part of the report applies also for the assessment for the European subject-specific labels. After the conclusion of the procedure, the stated requirements and/or recommendations and the deadlines are equally valid for the ASIIN seal as well as for the sought subject-specific label.

either by working in the industry or by working at the university. To do so, the students learn about advanced food chemistry, microbiology, and biotechnology as well as advanced principles of processing and quality. The program objectives of the program are described as follows:

1. Disseminate food science competencies along the entire food value chain and be able to disseminate the same in institutions of higher learning and the respective industries,
2. Conduct research, report and disseminate the information to both technical and non-technical audiences,
3. Advise the food industry on processing technologies and necessary measures for the industry to produce wholesome food products.

In the program, the following learning outcomes are described:

- PLO 1: Teach in institutions of higher learning as lecturers,
- PLO2: Conduct research in institutions of higher learning and research organisations,
- PLO 3: Offer advisory and consultancy services in the food industry,
- PLO 4: Work in the food industry and public institutions involved in food regulations,
- PLO 5: Prepare them for further studies.

The other program under review here, the Master's degree program Animal Science was first offered in 1990. The program has remained relevant for the Kenyan industry, since livestock contributes at least 10% of the national GDP, and half of the agricultural GDP. Feeding livestock properly, hence, is an important and viable skill in livestock production. The program aims at training animal nutritionist to coordinate research, training, and outreach in animal nutrition to increase livestock productivity. To do so, the Faculty of Agriculture at Egerton University has formulated the following objectives:

1. Advance Animal Nutrition training at postgraduate level,
2. Solve the myriad constraints facing livestock industry particularly Animal Nutrition,
3. Set up a system that would enhance upgrading of research capacity of faculties in the related departments,
4. Enhance a locally collaborative network amongst the many players in the field of livestock feeding and nutrition.

They further describe the following learning outcomes for the study program:

- PLO 1. Provide advanced technical extension advisory services in livestock production and development,
- PLO 2. Teach and demonstrate application of principles of nutrition to livestock development,
- PLO 3. Design and implement improvements in livestock feeding strategies and the feed industry,
- PLO 4. Promote and manage livestock entrepreneurship,
- PLO 5. Conduct research and advance knowledge in applied animal nutrition.

During the audit, the experts generally agreed with the objectives and learning outcomes of both study programs under review. One learning outcome they did not agree with, however, concerns the first PLO of the Master's degree program Food Science: "Teach in institutions of higher learning as lecturers." They experts do not see how teaching at a higher education institution is represented in the courses of the study program.

For the study program Food Science, the university has applied for the EQAS Food Label. The experts also examined the submitted documents in regards to the criteria set by IFA (ISEKI-Food Association). In order to be awarded the EQAS Food Label seal, the curriculum needs to cover certain areas, including food safety and microbiology, food chemistry and analysis, food processing and engineering, quality management and the law, as well as generic competences. These criteria areas ensure that students acquire knowledge and skills in ensuring the safety of food products, understanding food chemistry principles, utilizing analytical techniques for food analysis, optimizing food processing and engineering techniques, adhering to quality management practices and legal standards, and developing generic competences such as critical thinking, problem-solving, teamwork, communication, and ethical decision-making.

According to the experts the current curriculum does not fully satisfy the requirements of the seal. The deficiencies will be discussed throughout this report as they coincide with the ASIIN criteria.

Criterion 1.2 Name of the Degree Program

Evidence:

- Self-assessment report
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The two study programs under review here are called “Food Science” and “Animal Nutrition.” The names of the study programs do show full congruence with their respective curricula and learning outcomes. In the documentation, the names of the study programs are used consistently.

During the audit there was a discussion about the name “Food Science.” The name does cover the curriculum and learning outcomes, but the experts opined that the study program puts emphasis on technologies. They recommended to integrate this curricular focus into the name of the degree program, i.e., calling it “Food Science and Technology;” The university replied that the respective Bachelor’s degree program is already called exactly that. Since technologies are focused even more in the undergraduate program, the coordinators wanted to use a more general terminology to describe the Master’s degree program.

Criterion 1.3 Curriculum

Evidence:

- Self-assessment report
- Curriculum review
- Matrices aligning courses and program learning outcomes
- Curriculum review
- Discussions during the audit

Preliminary assessment and analysis of the experts:

Both Master’s degree programs under review here are designed to be completed over the course of two years. During the first year, the students take courses to deepen their knowledge about their respective fields. The second year is reserved for the research thesis. Students are supposed to first identify a potential research project and prepare a proposal. The proposal is then presented and approved by the department and the faculty. The students then write their thesis which they have to defend orally after handing it in. After successfully finishing all courses and their thesis the graduates are awarded with a Master of Science.

The curriculum of the Master’s degree program Animal Nutrition is structured as follows: Throughout the two-year study program there are 15 modules to take within the first year. These modules are all one-semester courses, that yield a credit factor (CF) of 2 to 4. Either

semester has a credit load of 24 CF with the thesis in the second year taking 15 CF. The courses impart knowledge on academic work (“Scientific writing and reporting” (2 CF)), on statistics (“Statistical computing in agricultural sciences” (3 CF); “Biometrics” (3 CF)), and on the eponymous animal nutrition. Courses on the latter include field-trips, e.g. to a slaughterhouse, and include discussions of current topics. The course “Animal bioclimatology and ethology” (3 CF), e.g., deals with the effects of climate change on the animals and discusses how to manage strategies to adapt to these effects.

The curriculum of the Master’s degree program Food Science has a structure that generally equals that of the program Animal Nutrition. In the first year, the students take courses, while the second year focuses on the thesis. In the first semester, students take six courses amounting to 18 CF. The second semester consists of four more core courses (16 CF) and one elective course (4 CF). The thesis, which students spend their second year on, is worth 15 CF. The course disciplines can generally be subsumed under the three topics of food microbiology, food chemistry, and food processing. Further courses include statistics (“Biometrics” (3.5 CF), and “Scientific writing and reporting” (2 CF), an introduction to academic procedures. The electives that are offered in the second semester of the study program are all consecutive advancements of topics that are discussed in the first semester (i.e., “Advances in food chemistry,” “Food processing,” and “Dairy processing technology”). The focus of the program is indubitably put on dairy, skipping in-depth discussions of meat and vegetable processing. This is due to the fact that, in Kenya, dairy remains a core issue. Furthermore, the University of Nairobi focuses their Food Science courses on meat production.

The curriculum is regularly reviewed every four years with a focus on current trends in industry and market. The reviews include stakeholders from within the university as well as external stakeholders, among them representatives from the government and the industry. When, during a curriculum review, more than 30% of a program is changed, it is subjected to the national accreditation by the Commission for University Education.

Generally speaking, the study programs under review here fulfil the requirements that are expected at the EQF 7. During the audit, there was a discussion regarding the lack of entrepreneurial teaching which the university forwent on purpose in the Master’s courses since these skills are already taught on the Bachelor’s level. A more serious shortcoming applies to the Master’s degree program Food Science, especially in regard to the EQAS Food Label. There appears to be a lack of course material on hygiene, as well as quality management systems in the food industry. The experts are of the opinion that the following topics should be covered to a higher degree within the study program:

- practices in maintenance of plant hygiene and its relation to Good Manufacturing Practice (GMP),
- application of the principles of Good Laboratory Practice (GLP), safety in the context of a food laboratories,
- quality management systems in the food industry and documentation.

The last topic could be part of the module “Food Quality Assurance,” with lectures on Food Quality and Management Systems, as well as tools used in these systems, e.g., to monitor and control processes.

As of now, student mobility for the two Master’s programs is not a critical concern, neither for the staff nor for the students. The programs do attract students from other countries (among them neighboring countries and Ghana) and one expectation of the international accreditation is to attract more students from other African countries, especially Lusophone and Francophone countries. As written in the self-assessment report, there is currently no means of credit transfer so outward student mobility, both national and international, is impossible without time-loss. During the audit, there was a small discussion in which credit transfer was, indeed, possible. The experts are looking forward to documentation and remain with the notion that student mobility should be guaranteed.

A point of concern for both study programs is the inclusion of internships into the curricula. Currently, internships are being developed with the university looking for industrial partners. During the second year of their studies, students are already taking part in internships (often about three months’ time) in the surrounding production plants but they do not receive credits for their work there. While the internship is deemed an important factor of the study program the partnerships with the private sector should be formulized into the programs to make them ECTS-honored and traceable. Furthermore, there should be contracts of intellectual property before collaborations to guarantee win-win relationships between individual students, the university, and the private sector.

Lastly, a small discrepancy was discovered regarding the “Biometrics” course that is offered under the same code (STAT 700) in both study programs. In the Master’s degree program Animal Nutrition, this module is worth 3 CF, while in the Food Science curriculum is it worth 3.5 CF. This discrepancy should either be removed or be explained by a difference in workload between the study programs.

Criterion 1.4 Admission Requirements

Evidence:

- Self-assessment report
- Standards and guidelines (as of 2014)
- Discussions during the audit

Preliminary assessment and analysis of the experts:

To be admitted to either of the two Master's degree programs under review here, applicants need to have obtained at least an upper second-class honors degree or its equivalent in fields or disciplines relevant to the respective program. Interested parties with lower second-class honors degrees may apply if they can substantiate at least two years of work experience in a relevant industry. Degrees are only considered if they are recognized by Egerton University Senate. Applicants with qualifications obtained outside of Kenya need their certificates equated by the Commission for University Education.

The auditors did not have any issue with the admission procedure and the requirements.

Criterion 1.5 Workload and Credits

Evidence:

- Self-assessment report
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The workload of the students of either study program under review here is measured in credit factors (CF). 1 CF is equivalent to 15 instructional hours or 30 hours in a tutorial session, practical work and self-study. The courses in both programs are designed to have mostly 3 or 4 CF. The total amount of credit factors to achieve a Master's degree in Animal Nutrition is 63 CF, and in Food Science 53 CF.⁵

In both study programs the work in classes and with the thesis are split in two, so that students can focus on instruction in the first year and on their research in the second year. Structural peaks in the workload are avoided.

During the audit, an issue arose regarding the self-study time. It appears that the self-study time, for the sake of being virtually unknowable, is not traced within the scope of each module by the faculty. This way, it is not possible to gauge the (average) effort for each module and especially laborious courses may remain undervalued. The experts propose that the self-study time is taken from student questionnaires in every module and analyzed.

⁵ A typo regarding the credit factors for either study program was corrected here after the statement by the HEI. The comment by the HEI can be found in the annex, no 8.

This way, the program coordinators can deduce trends within the modules and adapt the estimated time needed individually.

Furthermore, there are no conversions of the CF system to the ECTS system in the documentation. The equivalent needs to be handed in.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Self-assessment report
- Discussions during the audit

Preliminary assessment and analysis of the experts:

For both study programs under review here, the focus of education is put on the development of high-level expertise and critical thinking skills. To do so, the curriculum is structured to stimulate active learning through practicals, group discussions and seminars on topical issues. Students receive a course outline at the beginning of each semester, which contains learning outcomes of the course, its contents, evaluations and reference materials.

The effectiveness of teaching is regularly evaluated by the university quality assurance directorate. For one, newly recruited lecturers are trained in didactics and training on effective instructional skills and on supervision of graduate students and research writing is regularly repeated.

During the audit, the students appeared very content with the methods of instruction in both study programs. The assessors, too, welcomed the enthusiasm of the teaching personnel.

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

As per the statement given by the university, the program directors are considering a change of name for the master's program "Food Science." The suggestion made by the experts, i.e. renaming the program "Food Science and Technology" is acceptable for the university. The name change will be forwarded to the University Senate for approval. The assessors are looking forward to the evidence.

One shortcoming discussed for the Master's degree concerns the minimal subjects that need to be covered for the EQAS Food Label. The university responds that they plan to include the following subjects in the core curriculum:

1. Practices in maintenance of plant hygiene and its relation to Good Manufacturing Practice (GMP) - in, Food Microbiology (FOST 711) and Food Quality Assurance (FOST 735)
2. Application of the principles of Good Laboratory Practice (GLP), safety in the context of a food laboratories, - In Advances in Food Analysis (FOST 722)
3. Quality management systems in the food industry and documentation.- in Food Quality Assurance (FOST 735)

The assessors are looking forward to the evidence of implementation of these subjects in the core curriculum.

In its statement, the university states that credit transfer, as of now, if indeed not possible, as was described in the self-assessment report. The department is discussing how to make credit transfers possible. The assessors welcome this change and expect evidence regarding this.

Regarding the discrepancy of credit factors in the "Biometrics" course (STAT 700), the university writes that this was an error: both courses are offered by the Department of Mathematics and amount to 3.0 CF. The experts are content with this explanation.

Lastly, the university handed in the following conversion of CF to ECTS:

1 ECTS = 25-30 hrs and is equivalent to 1.2 – 2 Credit Factors (CF)

The calculation of CF from contact hours depends on whether it is Lecture or Laboratory/Practical hours/

For lectures, 1 CF is equivalent to 1 contact hour per week in a semester of 15 weeks.

For Laboratory sessions, 1 CF is equivalent to 2 contact hours per week for 15 weeks

An MSc thesis is set at 15 CF (in year 2)

Example, a 3.0 CF course has 2 lecture hours per week and 2 practical hours per week. This translates to 30 lecture hours per semester and 30 practical hours per semester.

A 3.0 CF course without practicals has 3 hours per week or 45 hours per semester.

The assessors are content with this explanation.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, Concept and Organisation

Evidence:

- Self-assessment report
- Examination statute
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The examinations at the university are performed in accordance with the respective Eger-ton University Statute and with the ISO procedure for thesis examination. The examination forms in both study programs vary (assignments, practicals, continuous assessment examinations, regular, resit or special examinations), and are performed at the end of the re-spective semester. Examinations are moderated by both internal and external examiners to ensure coverage of the course outline and the quality. During each course, there are at least two continuous assessment tests (CATs), the average of which account for 40% of the final grade. The remaining 60% is calculated from the final examination. The pass mark for each course is 50%.

The form of the assessment and its contents are communicated to the students at the be-ginning of the course by means of the course outlines. Students who fail an exam are al-lowed to resit an exam once. Failing a resit exam results in disqualification from the pro-gram.

To finish their studies, students need to write a final research thesis within the second year of the study, beginning with a proposal that needs to be accepted both by the department and the faculty. After writing the thesis, it needs to be orally defended.

Examinations and students' results are subjected to quality assurance, by way of internal (by departmental and faculty staff) and external moderation (by faculty from another uni-versity appointed as an external examiner for the program). Currently, the department en-gages one external examiner who moderates the examinations and results for the depart-ment for all the programs offered by the department. The external examiner reports for a given year are discussed during the department examination review and copies of the same are put in the custody of the department for the external assessors.

The assessors are content with the examinations and their organization.

3. Resources

Criterion 3.1 Staff and Staff Development

Evidence:

- Self-assessment report
- Lists of teaching staff
- Discussions during the audit

Preliminary assessment and analysis of the experts:

Staff development is regulated by a policy from the university level, including individual and institutional requirements. Staff are given the opportunity to develop their skills and to improve on ineffective skills in their teaching duties. New staff are employed on basis of a minimum competence level based on the university employment criteria. Still the faculty admits that there are current challenges in the implementation of university policies on staff development and replacement, i.e. funding. Staff training and recruitment is dependent on funding, especially through partners, donors, or scholarships. In order to guarantee a continuous provision of quality teaching and supervision, there is a need of institutionalized and well-resourced programs of staff development. There are, however, already fee waivers, scholarships and study leaves for staff trainings provided by the university. It appears, however, that recruitment happens mostly from within the university. The auditors recommend here to open the recruitment process to application from outside the organization as well.

During the audit, it became obvious that both study programs are particularly small. The Master's degree program Animal Nutrition has an intake capacity of 20 students per cohort, of which there are starting cohort sized of twelve. The program Food Science has a capacity of 15, of which only 10 are occupied on general. This is in contrast to the academic staff, of which there are eight with a PhD degree in Food Science and 13 in Animal Nutrition. The experts calculate that the starting cohorts should be scaled up accordingly to keep both programs attainable in the future. The university said that a need for graduates with a Master's degree are, in general, a relatively new development in the area. An international accreditation of two Master's degrees was a plan by the faculty to accommodate for that shift and to attract more students, both nationally and internationally. Finally, an issue arises with student fees. Students are more likely to begin working after receiving a Bachelor's

degree than to spend more years to invest in their education. The small cohort size might, in fact, be an issue that will be resolved in the near future.

Criterion 3.2 Funds and equipment

Evidence:

- Self-assessment report
- Inspection of the facilities
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The department receives general funds from the university for equipment through the university procurement system. As for human resources, the founding is allocated for the most part from the Government of Kenya.

The general teaching facilities consist of a pool resource that is managed by the directorate of timetabling and examinations. There are lecture and self-study rooms available for individual departments for postgraduate students with a capacity of 25. Lecture halls are generally connected to the internet and WiFi is readily available.

Within the Faculty of Agriculture, the Department of Animal Sciences and the Department of Dairy, Food Science and Technology provide various facilities to support the implementation of the degree programs under review. Available facilities include lecture rooms/auditoriums, classes, tutorial or group discussions rooms, laboratories for student practical works and research activities, office rooms, library/reading rooms, information, and technology facilities (internet network).

During the audit, the assessors visited the pilot food processing facility in the Guildford Dairy Institute, the beef housing facility, the Safe Foods Reference Laboratory and the biochemistry lab. The processing facility in the dairy institute is in strong need of renovation. No laboratories comply with European safety standards, due to outdated fire protection technology and missing periodic maintenance of safety relevant research devices (centrifuges, safety cabinets). In the Safe Foods Reference Laboratory two mass spectrometers are housed in inadequate rooms due to missing air conditioning. It is necessary to improve this situation, especially in regards to the maintenance of the equipment and access/usage records. Especially some of the newer machines will need regular maintenance to ensure that data collection remains accurate.

The experts see, however, that the spatial and technical possibilities are adequate to comprehensively achieve the intended learning objectives of the curriculum in the both Master's programs for all relevant target animal species (in particular goats, sheep, cattle, poultry).

In summary, the auditors can confirm that facilities are sufficient for guaranteeing the sustenance of all programs under review. Still, there might be a viable improvement of collaboration between the departments if there was a core facility managed by the faculty. The facilities give the impression that research conducted at the department is applied research. It would be advisable to strengthen the basic research conducted at the department as well.

In general, there are no bottlenecks at the Department of Animal Sciences and the Department of Dairy, Food Science and Technology.

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

Regarding the resources, the university writes: "The departments will continue to engage with the management to ensure adequate resources are available for the programmes.

The staff recruitment programme is open and recruits from both within and outside the university.

The departments will continue to engage the university management to allocate resources to continuously innovate the facility over time.

The departments will work with management to enhance conformity to equipment maintenance and safety standards."

The experts are looking forward to the evidence regarding recourses.

Lastly, the university will also consider the importance of basic research over applied research. They will try to encourage basic research but they are aware that research funding in graduate programs emphasized mostly applied research.

4. Transparency and Documentation

Criterion 4.1 Module Descriptions

Evidence:

- Self-assessment report
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The module handbooks in their current state need to be reworked to conform to the standards for module descriptions. All pieces of information need to be present in the module handbook (i.e., the module title and content, the person responsible, the teaching method, credits and workload and the intended learning outcomes, the form of assessment and the details about grading, as well as the recommended literature). The students receive course catalogues at the beginning of the semester, but the whole module handbook for either study program needs to be readily accessible, in full, to all interested parties.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Self-assessment report
- Exemplary diploma and diploma supplement
- Discussions during the audit

Preliminary assessment and analysis of the experts:

Upon graduating from one of the study programs under review here, the graduate receives a diploma and a diploma supplement. The former contains the title (Master of Science) and the name of the study program, the name of the applicant and the day of issuance. The diploma supplement contains a more detailed summary of the courses taken and the grade received in each course. The courses are averaged and a legend gives an overview of the grading system from A to F and its respective grading in percentages.

The assessors did not take issue with the diploma and diploma supplement and the information contained therein.

Criterion 4.3 Relevant Rules

Evidence:

- Self-assessment report
- Egerton University statute 39 (2) of 2013

- Guidelines for university programs
- Rules and regulations web-page: <https://www.egerton.ac.ke/students-admissions/downloads/rules-and-regulations>
- Discussions during the audit

Preliminary assessment and analysis of the experts:

Relevant rules of the two study programs under review here are listed in the standards and guidelines for university programs and the Egerton University statute 39 (2) of 2013. In it, there are guidelines on developing and reviewing the programs, admission qualifications, academic staff qualifications, and facilities and equipment expected in Kenyan universities. The statute 39 (2) of 2013 contains all necessary information on the Master's degree programs at Egerton University.

The rules and regulations are readily accessible via the web-site to all interested parties. The expert panel did not have issues with the rules and regulations.

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

- Self-assessment report
- Procedure for teaching effectiveness evaluation questionnaire
- SWOT-analyses for the study programs
- Discussions during the audit

Preliminary assessment and analysis of the experts:

Quality management at Egerton University is regulated by the Directorate of Quality Assurance. This board regularly conducts assessments about teaching effectiveness and examination procedures, the results of which are regularly released at the end of the semester.

The teaching effectiveness is gauged using student questionnaires at the end of a semester, but before the examination period, in some modules. In it, students are asked 18 questions about the lecturers and the course and are given a 5-point Likert scale from "very good" to "very poor." The questions contain clarity of the course, the presentation of the contents

and general satisfaction with the lecturer. The lecturer will receive the feedback from the directorate of quality assurance.

The department utilizes SWOT-analyses for both study programs to formalize the strengths and weaknesses of the programs and to develop a course of action. As an example of the analyses, one of the weaknesses of the program Animal Nutrition spotted was the low number of students, the improvement of which was worked out to be an international accreditation.

All in all, the assessors are content with the quality management procedures at this department of Egerton University. The evaluations of the modules should encompass all modules in every semester to guarantee a sufficient overview of the satisfaction in all courses. The university is aware of this shortcoming and concedes in their self-assessment report that there is a need to expand the number of courses that are regularly evaluated. Another issue is that the feedback loop in these evaluations is not closed. The students are asked to give their feedback about the modules they have taken part in; However, they are not informed about how their feedback will affect the course in the future.

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

Regarding the module handbook the university writes that the handbooks will be uploaded on the website.

The Quality Assurance Department will be involved to provide feedback to the students about the questionnaires they fill out at the end of the semester, according to the statement. The assessors are looking forward to the evidence for these issues.

D Additional Documents

Before preparing their final assessment, the panel ask that the following missing or unclear information be provided together with the comment of the Higher Education Institution on the previous chapters of this report:

No additional documents needed.

E Comment of the Higher Education Institution (13.11.2023)

The following quotes the comment of the institution:

S.No	Query in report	Response
1.	PLO 1 - "Teach in institutions of higher learning as lecturers." The experts do not see how teaching at a higher education institution is represented in the courses of the study program.	This is well noted. The PLO 1 will be revised and modified accordingly.
2.	Criteria set by IFA (ISEKI-Food Association) – "According to the experts the current curriculum does not fully satisfy the requirements of the seal. The deficiencies will be discussed throughout this report as they coincide with the ASIIN criteria".	The responses will be as per the specific challenges presented in the respective section of the report.
3.	... the experts opined that the study program puts emphasis on technologies. They recommended to integrate this curricular focus into the name of the degree program, i.e., calling it "Food Science and Technology;"	A justification for change of name will be forwarded to the University Senate for approval i.e., change from MSc Food Science to MSc Food Science and Technology.
4.	<p>A more serious shortcoming applies to the Master's degree program Food Science, especially in regard to the EQAS Food Label.</p> <p>There appears to be a lack of course material on hygiene, as well as quality management systems in the food industry. The experts are of the opinion that the following topics should be covered to a higher degree within the study program:</p>	<p>The identified topics to address the gaps will be included and covered in existing core/compulsory courses as shown below:</p> <ol style="list-style-type: none"> 1. Practices in maintenance of plant hygiene and its relation to Good Manufacturing Practice (GMP) - in, Food Microbiology (FOST 711) and Food Quality Assurance (FOST 735) 2. Application of the principles of Good Laboratory Practice (GLP), safety in the context of a food laboratories, - In Advances in Food Analysis (FOST 722)

		3. Quality management systems in the food industry and documentation.- in Food Quality Assurance (FOST 735)
5.	During the audit, there was a small discussion in which credit transfer was, indeed, possible. The experts are looking forward to documentation and remain with the notion that student mobility should be guaranteed.	The departments through the University Senate will engage the Commission for University Education,(CUE) the regulator on possibilities of allowing MSc programme credit transfers across institutions to facilitate student mobility.
6.	Lastly, a small discrepancy was discovered regarding the “Biometrics” course that is offered under the same code (STAT 700) in both study programs. In the Master’s degree program Animal Nutrition, this module is worth 3 CF, while in the Food Science curriculum is it worth 3.5 CF. This discrepancy should either be removed or be explained by a difference in work-load between the study programs.	This was an error in the Food Science course module handbooks: The course is STAT 700 Biometrics offered by the Department of Mathematics to both programmes and has a CF of 3.0.
7.	During the second year of their studies, students are already taking part in internships (often about three months’ time) in the surrounding production plants but they do not receive credits for their work there. While the internship is deemed an important factor of the study program and the partnerships with the private sector should be formalized into the programs to make them ECTS-honored and traceable.	The recommendation to formalize internship will be developed and forwarded to the University Senate for budgetary implications assessment and approval.
8.	The total amount of credit factors to achieve a Master’s degree in Animal Nutrition is 53 CF, and in Food Science 63 CF.	Please note this correction in your document for the total CFs for the two programmes: MSc Animal Nutrition – CF = 63 MSc Food Science – CF = 53
9.	The experts propose that the self-study time is taken from student questionnaires in every module and analyzed. This way, the program coordinators can deduce trends within the modules and adapt the estimated time needed individually.	The departments will develop a tool to collate the time spent on individual study to enable assessment of the proper loading of the programme/Modules.

10.	<p>There are no conversions of the CF system to the ECTS system in the documentation. The equivalent needs to be handed in.</p>	<p>1 ECTS = 25-30 hrs and is equivalent to 1.2 – 2 Credit Factors (CF)</p> <p>The calculation of CF from contact hours depends on whether it is Lecture or Laboratory/Practical hours/</p> <p>For lectures, 1 CF is equivalent to 1 contact hour per week in a semester of 15 weeks.</p> <p>For Laboratory sessions, 1 CF is equivalent to 2 contact hours per week for 15 weeks</p> <p>An MSc thesis is set at 15 CF (in year 2)</p> <p>Example, a 3.0 CF course has 2 lecture hours per week and 2 practical hours per week. This translates to 30 lecture hours per semester and 30 practical hours per semester.</p> <p>A 3.0 CF course without practicals has 3 hours per week or 45 hours per semester</p>
11	<p>In order to guarantee a continuous provision of quality teaching and supervision, there is a need for institutionalized and well-resourced programs of staff development.</p>	<p>The university has a staff development policy. The departments will continue to engage with the management to ensure adequate resources are available for the programmes.</p> <p>The staff recruitment programme is open and recruits from both within and outside the university.</p>
12	<p>The processing facility in the Dairy Institute is in strong need of innovation.</p> <p>No laboratories comply with European Standards due to outdated fire protection technology and missing periodic maintenance of safety relevant research devices (centrifuges). Two Safe Food Mass Spectrometers are housed in inadequate rooms due to missing air conditioning</p>	<p>The departments will continue to engage the university management to allocate resources to continuously innovate the facility over time.</p> <p>The departments will work with management to enhance conformity to equipment maintenance and safety standards.</p>

13.	The facilities give the impression that research conducted at the departments is applied research. It would be advisable to strengthen the basic research conducted at the department as well.	The importance of balance between applied and basic research is well noted and will be emphasized to encourage more basic research in the departments. Most research funding in the graduate programmes emphasize applied research.
14	Access to module handbook	The module handbooks to be uploaded on the programme and university websites.
15.	The feedback loop in the evaluations is not closed. The students are asked to give their feedback about the modules they have taken part in; However, they are not informed about how their feedback will affect the course in the future.	The department will engage the Quality Assurance Department to provide feedback to students.

F Summary: Expert recommendations (14.11.2023)

Taking into account the additional information and the comments given by Egerton University the peers summarize their analysis and **final assessment** for the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ma Food Science	With requirements for one year	30.09.2029	EQAS-Food	30.09.2029
Ma Animal Nutrition	With requirements for one year	30.09.2029	EQAS-Food	30.09.2029

Requirements

For all degree programmes

- A 1. (ASIIN 1.3) The stakeholders and a student body need to be involved in the evaluation and revision of the curricula.
- A 2. (ASIIN 1.3) There need to be systematized partnerships with the private sector.
- A 3. (ASIIN 1.5) There needs to be a systematized way to evaluate and adjust the self-study time in every module.
- A 4. (ASIIN 3.1) The capacity of the study programs must be reconsidered as 20 students seem to be unattainable with the current staff, budget and equipment.
- A 5. (ASIIN 4.1) The module handbooks need to be reworked and be published, in full, on the university website to ensure access by prospective students and third parties.
- A 6. (ASIIN 5) The evaluation of the modules need to have closed feedback loops: Students should be informed about how their feedback is changing the courses.

For the master's degree programme Food Science

- A 7. (ASIIN 1.1) Learning outcome 1 is not represented in the modules and needs rephrasing.

- A 8. (ASIIN 1.3) The curriculum needs to contain courses on practices in maintenance of plant hygiene and its relation to GMP; application of the principles of GLP, health and safety in the context of a food laboratory; quality management systems in the food industry and documentation.

Recommendations

For all degree programmes

- E 1. (ASIIN 1.2) It is recommended to change the name of the study program to “Food Science and Technology” since technologies are an integral part of the program.
- E 2. (ASIIN 1.3) It is recommended to formalize the internships into the program to make them ECTS-honored and traceable.
- E 3. (ASIIN 1.3) Student mobility should be guaranteed.
- E 4. (ASIIN 1.3) It is recommended to set up contracts of intellectual property before collaborations for win-win relationships.
- E 5. (ASIIN 3.1) It is recommended to open the recruit process to people from outside the organization.
- E 6. (ASIIN 3.2) It is recommended to build and organize a core facility to improve collaboration between the departments.
- E 7. (ASIIN 3.2) It is recommended to strengthen the performance of basic research over applied research.
- E 8. (ASIIN 3.2) It is recommended to ensure regular maintenance of the equipment. The laboratory management should be structured.

For the master’s degree programme Food Science

- E 9. (ASIIN 1.3) It is recommended to include in the module “Food Quality Assurance” lectures on Food Quality and Management Systems, as well as tools used in these systems and process monitoring.

G Comment of the Technical Committee 08 – Agriculture, Nutritional Sciences and Landscape Architecture (21.11.2023)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and agrees with the findings of the expert panel.

Assessment and analysis for the award of the EQAS-Food Label:

The Technical Committee deems that the intended learning outcomes of the degree programmes do comply with the Subject-Specific Criteria of the Technical Committee 08 – Agriculture, Forestry, Food Sciences, and Landscape Architecture.

The Technical Committee 08 – Agriculture, Nutritional Sciences and Landscape Architecture recommends the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ma Food Science	With requirements for one year	30.09.2029	EQAS-Food	30.09.2029
Ma Animal Nutrition	With requirements for one year	30.09.2029	EQAS-Food	30.09.2029

H Decision of the Accreditation Commission (08.12.2023)

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

The Accreditation Commission discusses the procedure and generally agrees with the observations made by the expert team and the Technical Committee. However, regarding A4 they argue that the potential changes of the study programme should not be reflected in the list of requirements but, rather, is a recommendation. This is why A4 is changed to E9.

Assessment and analysis for the award of the EQAS-Food Label:

The Accreditation Commission deems that the intended learning outcomes of the degree programmes do comply with the Subject-Specific Criteria of the Technical Committee 08 – Agriculture, Forestry, Food Sciences, and Landscape Architecture.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ma Food Science	With requirements for one year	30.09.2029	EQAS-Food	30.09.2029
Ma Animal Nutrition	With requirements for one year	30.09.2029	EQAS-Food	30.09.2029

Requirements

For all degree programmes

- A 1. (ASIIN 1.3) The stakeholders and a student body need to be involved in the evaluation and revision of the curricula.
- A 2. (ASIIN 1.3) There need to be systematized partnerships with the private sector.

- A 3. (ASIIN 1.5) There needs to be a systematized way to evaluate and adjust the self-study time in every module.
- A 4. (ASIIN 4.1) The module handbooks need to be reworked and be published, in full, on the university website to ensure access by prospective students and third parties.
- A 5. (ASIIN 5) The evaluation of the modules need to have closed feedback loops: Students should be informed about how their feedback is changing the courses.

For the master's degree programme Food Science

- A 6. (ASIIN 1.1) Learning outcome 1 is not represented in the modules and needs rephrasing.
- A 7. (ASIIN 1.3) The curriculum needs to contain courses on practices in maintenance of plant hygiene and its relation to GMP; application of the principles of GLP, health and safety in the context of a food laboratory; quality management systems in the food industry and documentation.

Recommendations

For all degree programmes

- E 1. (ASIIN 1.2) It is recommended to change the name of the study program to "Food Science and Technology" since technologies are an integral part of the program.
- E 2. (ASIIN 1.3) It is recommended to formalize the internships into the program to make them ECTS-honored and traceable.
- E 3. (ASIIN 1.3) Student mobility should be guaranteed.
- E 4. (ASIIN 1.3) It is recommended to set up contracts of intellectual property before collaborations for win-win relationships.
- E 5. (ASIIN 3.1) It is recommended to open the recruit process to people from outside the organization.
- E 6. (ASIIN 3.2) It is recommended to build and organize a core facility to improve collaboration between the departments.
- E 7. (ASIIN 3.2) It is recommended to strengthen the performance of basic research over applied research.
- E 8. (ASIIN 3.2) It is recommended to ensure regular maintenance of the equipment. The laboratory management should be structured.

- E 9. (ASIIN 3.1) It is recommended to reconsider the capacity of the study programs as 20 students seem to be unattainable with the current staff, budget and equipment.

For the master's degree programme Food Science

- E 10. (ASIIN 1.3) It is recommended to include in the module "Food Quality Assurance" lectures on Food Quality and Management Systems, as well as tools used in these systems and process monitoring.

I Fulfilment of Requirements (06.12.2024)

Analysis of the experts and the Technical Committees (19.11.2024)

- A 1. (ASIIN 1.3) The stakeholders and a student body need to be involved in the evaluation and revision of the curricula.

Initial Treatment	
Peers	not fulfilled Vote: unanimous Justification: The document "Procedure for Curriculum Development and Review" (Doc-No. EU/AA/OP/01) still does not stipulate that students must be involved in the evaluation and revision of curricula.
TC 08	not fulfilled Vote: unanimous Justification: The TC follows the opinion of the expert team without changes.

- A 2. (ASIIN 1.3) There need to be systematized partnerships with the private sector.

Initial Treatment	
Peers	Not (completely) fulfilled Vote: unanimous Justification: Current cooperation contracts/agreements with industrial partners to systematically offer internships are very limited. In the MSc Animal Nutrition program such an agreement only exist with the Africa Centre of Excellence in Sustainable Agriculture and Agribusiness Management (CESAAM). In the MSc Food Science program, the lumpsum subagreement for a joint scientific project between the International Center for Tropical Agriculture and Egerton University was in force from April to November of 2021 and 2022. There is no hint that this subagreement is still active.
TC 08	not (completely) fulfilled Vote: unanimous Justification: The TC follows the opinion of the expert team without changes.

- A 3. (ASIIN 1.5) There needs to be a systematized way to evaluate and adjust the self-study time in every module.

Initial Treatment	
Peers	<p>Not fulfilled</p> <p>Vote: unanimous</p> <p>Justification: The statement of the University, that “the departments will develop a tool to collate the time spent on individual study to enable assessment of the proper loading of the programme/Modules” is, essentially, a good way to deal with this requirement. However, the statement is not specific enough. There is no indication of when and in what form the self-study time is addressed in the regular module evaluations by the students to enable the module to be adapted.</p> <p>For the MSc Food Science program, a table is provided estimating the general self-study time all modules and not for each individual module.</p>
TC 08	<p>Not fulfilled</p> <p>Vote: unanimous</p> <p>Justification: The TC follows the opinion of the expert team without changes.</p>

- A 4. (ASIIN 4.1) The module handbooks need to be reworked and be published, in full, on the university website to ensure access by prospective students and third parties.

Initial Treatment	
Peers	<p>Not (completely) fulfilled</p> <p>Vote: unanimous</p> <p>Justification: For both MSc programs, module handbooks are not available on the website.</p> <p>MSc Animal Nutrition: Description of module STAT700-Biometrics: references are missing</p> <p>MSc Food Science: revised module handbook is still missing</p>
TC 08	<p>not (completely) fulfilled</p> <p>Vote: unanimous</p> <p>Justification: Justification: The TC follows the opinion of the expert team without changes.</p>

- A 5. (ASIIN 5) The evaluation of the modules need to have closed feedback loops: Students should be informed about how their feedback is changing the courses.

Initial Treatment	
Peers	<p>Not fulfilled</p> <p>Vote: unanimous</p>

	Justification: In the future, the quality assurance department will provide feedback to the students about the questionnaires they fill out at the end of the semester. Unfortunately, the formal implementation of this feedback process is still missing.
TC 08	not fulfilled Vote: unanimous Justification: Justification: The TC follows the opinion of the expert team with-out changes.

For the programme Ma Food Science

- A 6. (ASIIN 1.1) Learning outcome 1 is not represented in the modules and needs rephrasing.

Initial Treatment	
Peers	fulfilled Vote: unanimous Justification: The learning outcome PLO1 was rightfully deleted. It is possible to work in Higher Education for any and warrants no special emphasis in a food science programme
TC 08	fulfilled Vote: unanimous Justification: Justification: The TC follows the opinion of the expert team with-out changes.

- A 7. (ASIIN 1.3) The curriculum needs to contain courses on practices in maintenance of plant hygiene and its relation to GMP; application of the principles of GLP, health and safety in the context of a food laboratory; quality management systems in the food industry and documentation.

Initial Treatment	
Peers	fulfilled Vote: unanimous Justification: Module FOST 735 ("FOOD QUALITY ASSURANCE") was supplemented by <ul style="list-style-type: none"> practices in maintenance of plant hygiene and its relation to Good Manufacturing Practice (GMP). Module FOST 722 ("ADVANCES IN FOOD ANALYSIS") was supplemented by <ul style="list-style-type: none"> application of the principles of Good Laboratory Practice safety in the context of a food laboratories. The contents "documentation" and "QM-systems in the food industry" were not addressed. They may be supplemented in FOST

	735 – FOOD QUALITY ASSURANCE. The revised Module hand-book is not available which makes further checking impossible.
TC 08	fulfilled Vote: unanimous Justification: The TC follows the opinion of the expert team without changes.

Decision of the Accreditation Commission (06.12.2024)

Degree programme	ASIIN-label	Subject-specific label	Accreditation until max.
Ma Food Science	Requirements A1-A5 not fulfilled	/	6 months prolongation
Ma Animal Nutrition	Requirements A1-A5 not fulfilled	/	6 months prolongation

J 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 Master degree program Animal Nutrition:

The following **curriculum** is presented:

YEAR 1 SEMESTER 1

CODE	TITLE	L	P	CF
ANSC 710	Scientific Writing and Reporting	15	30	2.0
ANNU 711	Digestive and Reproductive Physiology of Farm Animals	30	30	3.0
ANSC 712	Animal Bioclimatology and Ethology	30	30	3.0
LIPS 742	Organic Animal Production and Biodiversity	30	30	3.0
ANNU 713	Statistical Computing in Agricultural Sciences	30	30	3.0
ANNU 721	Mineral and Vitamin Nutrition	30	30	3.0
BIOC 715	Graduate Biochemistry	45	30	4.0
STAT 700	Biometrics	45	0	3.0
TOTAL		255	210	24

YEAR 1 SEMESTER 2

CODE	TITLE	L	P	CF
AGEX 732	Monitoring and Evaluation of Agricultural Extension	45	0	3.0
ANNU 720	Techniques in Animal Nutrition Research	0	90	3.0
ANNU 722	Ruminant Nutrition	45	30	4.0
ANNU 723	Non Ruminant Nutrition	45	30	4.0
ANNU 724	Livestock Feeds Processing Technology	30	30	4.0
ANNU 726	Advances in Animal Nutrition Biotechnology	30	30	3.0
ANNU 727	Pseudo Ruminant and Pet Animal Nutrition	30	30	3.0
TOTAL		225	240	24

YEAR TWO

CODE	TITLE	L	P	CF
ANNU 799	Thesis	0	450	15.0
GRAND TOTAL		480	900	63

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Master degree program Food Science:

Objectives:

1. Advance Animal Nutrition training at postgraduate level,

2. Solve the myriad constraints facing livestock industry particularly Animal Nutrition,
3. Set up a system that would enhance upgrading of research capacity of faculties in the related departments,
4. Enhance a locally collaborative network amongst the many players in the field of livestock feeding and nutrition.

Learning outcomes:

- PLO 1. Provide advanced technical extension advisory services in livestock production and development,
- PLO 2. Teach and demonstrate application of principles of nutrition to livestock development,
- PLO 3. Design and implement improvements in livestock feeding strategies and the feed industry,
- PLO 4. Promote and manage livestock entrepreneurship,
- PLO 5. Conduct research and advance knowledge in applied animal nutrition.

The following **curriculum** is presented:

YEAR I SEMESTER 1

CODE	TITLE	L	P	C.F
COMP 701	IT Application and DATA Management	30	30	3.0
FOST 711	Microbiology of Food Processing	45	0	3.0
FOST 721	Advances in Food Chemistry I	45	0	3.0
FOST 731	Food Processing I	45	0	3.0
FOST 732	Dairy Processing and Technology I	45	30	4.0
FOST 790	Scientific Writing and Reporting	15	30	2.0
TOTAL		225	90	18.0

YEAR 1 SEMESTER 2

CODE	TITLE	L	P	C.F
FOST 712	Biotechnology in Food Production	45	30	4.0
FOST 722	Advances in Food Analysis	45	45	4.5

J Appendix: Program Learning Outcomes and Curricula

FOST 735	Food Quality Assurance	30	60	4.0
STAT 700	Biometrics	45	15	3.5
TOTALS		165	150	16.0

ELECTIVES

CODE	TITLE	L	P	C.F
FOST 723	Advances in Food Chemistry II	60	0	4.0
FOST 733	Food Processing II	30	60	4.0
FOST 734	Dairy Processing Technology II	30	60	4.0

YEAR 2 SEMESTER 1 AND 2

CODE	TITLE	L	P	C.F
FOST 799	Thesis	0	450	15