ASIIN Seal & EQAS Food Label

Accreditation Report

Bachelor's Degree Programme
Food Science and Technology

Master's Degree Programme
Dairy and Meat Products Technology

Provided by
Higher Institute of Biotechnology of Béja
University of Jendouba

Version: 26 September 2025

Table of Content

A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
Sciences et Technologies des Aliments, Parcours: Contrôle Qualité des Aliments / Industries et Procédés alimentaires	Food Science and Technology: Food Quality Control Option/Food Industry and Processing Option	ASIIN, EQAS Food Label	-	TC 08
Master Professionnel en Technologies Appliquées aux Produits Laitiers et Carnés	Professional Master in Dairy and Meat Product Technology	ASIIN, EQAS Food Label	-	TC 08
Date of the contract: 02.02.2024 **Submission of the final version of the self-assessment report:** 15.05.2025 **Date of the onsite visit:** 1-2 July 2025 **at:** ISBB Beja				
Expert panel: Prof. Dr. Hamadi Attia, University of SFAX Prof. Dr. Gerhard Schleining, BOKU University				

[1] ASIIN Seal for degree programmes; EQAS-Food Label.

[2] TC: Technical Committee for the following subject areas: TC 01 - Mechanical Engineering/Process Engineering; TC 02 - Electrical Engineering/Information Technology; TC 03 - Civil Engineering, Geodesy and Architecture; TC 04 - Informatics/Computer Science; TC 05 - Materials Science, Physical Technologies; TC 06 - Engineering and Management, Economics; TC 07 - Business Informatics/Information Systems; TC 08 - Agriculture, Forestry, Food Sciences, and Landscape Architecture; TC 09 - Chemistry; TC 10 - Life Sciences; TC 11 - Geosciences; TC 12 - Mathematics; TC 13 - Physics; TC 14 - Medicine.

Dr. Manfred Grüneberg, Ehrmann AG Hiba Rbai, Student at University of SFAX	
Representatives of the ASIIN headquarter: Dr. Natalia Vega	
Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of March 28, 2023 Subject-Specific Criteria of Technical Committee 08 – Agriculture, Forestry, Food Sciences, and Landscape Architecture as of March 27, 2015	

B Accreditation Status

Result Overview

The most recent decision for the ASIIN Seal was made by the ASIIN Accreditation Commission on 26 September 2025.

Degree Programmes	ASIIN Seal	Validity
Ba Food Science and Technology	Accredited with requirements	26.09.2025 – 17.10.2026
Ma Dairy and Meat Products Technology	Accredited with requirements	26.09.2025 – 17.10.2026

Fulfilment of the Accreditation Criteria

ASIIN General Criteria / Subject-Specific Criteria	Ba Food Science and Technology	Ma Dairy and Meat Products Technology
1 Degree programme: Concept, Content & Implementation		
1.1 Objectives and learning outcomes (intended qualification profile)	Fulfilled	Fulfilled
1.2 Title of the degree programme	Fulfilled	Fulfilled
1.3 Curriculum	**Not fulfilled** Requirement A1	**Not fulfilled** Requirement A1
1.4 Admission requirements	Fulfilled	Fulfilled
1.5 Workload and credits	Fulfilled	Fulfilled
1.6 Didactics and teaching methodology	Fulfilled	Fulfilled

ASIIN General Criteria / Subject-Specific Criteria	**Ba Food Science and Technology**	**Ma Dairy and Meat Products Technology**
2 Exams: System, Concept and Organisation		
2 Exams: System, Concept and Organisation	Fulfilled	Fulfilled
3 Resources		
3.1 Staff and staff development	Fulfilled	Fulfilled
3.2 Student support and student services	Fulfilled	Fulfilled
3.2 Funds and equipment	Fulfilled	Fulfilled
4 Transparency and Documentation		
4.1 Module descriptions	**Not fulfilled** Requirement A1	**Not fulfilled** Requirement A1
4.2 Diploma and Diploma Supplement	Fulfilled	Fulfilled
4.3 Relevant rules	Fulfilled	Fulfilled
5 Quality Management: Quality Assessment and Development		
5 Quality Management: Quality Assessment and Development	**Not fulfilled** Requirement A2	**Not fulfilled** Requirement A2

Requirements

For all programmes

A 1. (ASIIN 1.3, 4.1) The module handbook needs to be revised and updated, particularly with respect to the alignment between the module names and the content.

A 2. (ASIIN 5) The results of the course satisfaction surveys need to be communicated to the students in order to close the feedback loop.

Accreditation History

The programmes have not been previously accredited by ASIIN.

C Characteristics of the Degree Programmes

a) Name	Final degree (original/ English translation)	b) Areas of Specialization	c) Corres-ponding 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
Food Science and Technology	Licence en Sciences et Technologies des Aliments (B.S. in Food Science and Technology)	- Food Quality Control - Food Industry and Processing	6	Full time	-	6 Semester	180 ECTS	Annually / September 2019
Dairy and Meat Products Technology	Master Professionnel (Professional M.Sc.)		7	Full time	-	4 Semester	120 ECTS	Annually / September 2019

The Higher Institute of Biotechnology of Béjà (ISBB), a constituent unit of the state University of Jendouba, was founded in 2006. ISBB offers six undergraduate degrees, four master's programmes and one doctoral programme. In this institution, both the Bachelor's degree in Food Science and Technology, which includes the specialisations in Food Quality Control (FQC) and Food Industry and Processing (FIP), and the Professional Master's degree in Dairy and Science Products Technology have been submitted for accreditation to the ASIIN and the EQAS Food Label.

The mission of ISBB is to offer an educational experience that will equip students with the necessary knowledge, skills and ethics to become professionals in biotechnology and food science. The institute is committed to fostering scientific knowledge and to promoting the advancement of technology through creative research and industry partnerships. It aims to produce graduates who are equipped to contribute to societal well-being, promote sustainable development and lead in the global scientific community.

The following scheme shows the ISBB's strategic orientation plan for the period 2023–2033:

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

For the **Bachelor programme in Food Science and Technology**, the institution has presented the following profile in the Self-Assessment Report (SAR):

"To ensure that graduates are well-prepared for successful careers in the food industry, the program has established the following PEOs:

PEO1: Graduates are competent in core areas of food science and technology.

PEO2: Graduates can integrate and apply their knowledge

PEO3: Graduates who are effective communicators

PEO4: ISBB graduates who are professional and entrepreneurial."

For the **Professional Master in Dairy and Meat Products Technology**, the institution has presented the following profile in the SAR:

"DMPT programme is established to produce graduates will be:

PEO 1: Knowledgeable and competent in dairy and meat technology, demonstrating the ability to apply innovative solutions to complex technical and scientific problems within the food industry.

PEO 2: Skilled researchers, capable of conducting rigorous scientific inquiries, critical thinking and contributing to advancements in dairy and meat science, while embracing lifelong learning and professional development.

PEO 3: Committed to ensuring food safety, quality, sustainability and ethical practices in dairy and meat processing, while adhering to industry regulations, quality standards and consumer protection measures.

PEO 4: Effective leaders, capable of driving industry advancements, adapting to change and collaborating with multidisciplinary teams to address complex challenges in dairy and meat production and processing".

The experts' review panel, composed of academic and professional experts, assessed the programmes against international quality standards with a focus on curriculum design, teaching and learning processes, quality management, industry cooperation, and internationalization efforts.

The panel observed a positive overall impression of ISBB's educational offering. The institution demonstrates a well-structured academic environment with strong ties to the food industry, a clear commitment to quality assurance, and a student-centred approach to support and development. Furthermore, the integration of research opportunities and innovative teaching practices was recognized as a significant strength.

At the same time, the panel identified areas where further enhancement is recommended. These include strengthening the transparency and communication of learning outcomes, improving survey and evaluation mechanisms, increasing the use of English language in teaching and documentation, and modernizing infrastructure and international cooperation strategies.

This report outlines in detail the strengths, areas for improvement, and the rationale behind the recommendations made, serving as a foundation for continuous development and alignment with international higher education standards.

D Expert Report for the ASIIN Seal[4]

1. The Degree Programme: Concept, Content & Implementation

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

Evidence:

- Self-Assessment Report (SAR)
- Industrial partners satisfaction infography
- Matrix PEO-PLOs-ASIIN SCC for each programme
- Module und PLO Matrix for each programme
- Module handbook for each programme
- Discussion during the audit

Preliminary assessment and analysis of the experts:
ISBB describes in the SAR the programme educational objectives (PEO) as well as the learning outcomes (PLOs) for each programme under review. In addition, in a matrix is shown the relationship between PEOs, PLOs and the SCC FA 08 and the EQAS LOs.

The development and periodic revision of the Programme Educational Objectives (PEOs) and Programme Learning Outcomes (PLOs) for each study programme is undertaken using a participatory approach. This approach involves academic staff, student representatives, alumni and socioeconomic partners. Prior to the submission of each programme for approval or revision by the Ministry of Higher Education and Scientific Research (MHESR), dedicated meetings are held with key industrial and institutional stakeholders to discuss programme relevance, skill alignment and emerging sectoral needs. Furthermore, a more extensive survey is conducted in collaboration with partner industries with a view to strengthening the institute-industry collaboration and identifying targeted actions to improve the alignment between training and labour market needs. This stakeholder feedback informs the review process, which is conducted on a quadrennial basis as

[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.

required. The subsequent review is scheduled for the 2026/27 academic year. The PEOs and PLOs of FQC, FIP and DMPT are listed on the ISBB website.

With regard to the career prospects available to those holding a **Bachelor's degree in Food Science and Technology with specializations in Food Quality Control (FQC) and Food Industry and Processing (FIP)**, ISBB has indicated that the Bachelor programme equips students with essential scientific and technical knowledge for the food sector. Graduates are prepared to apply their expertise in quality assurance, food safety and industrial processing while demonstrating effective communication, professionalism and entrepreneurial skills. It prepares students for roles in the food industry, such as laboratory technician, quality control technician or processing technician and offers a pathway to further education at the master's level.

Graduates of the **Master's programme Dairy and Meat Products Technology** are well-prepared for a career in the food industry sector, in areas such as the development of dairy and meat products, quality assurance and regulatory compliance. Furthermore, they are qualified to work in research institutions in positions involving scientific research and innovation in the field of dairy and meat technology.

The experts discuss with the rectorate and the programme coordinators the process for curriculum development and identifying training needs and developing teachers' skills. The institute's representatives clarify that the curriculum's design and development involve a multifaceted process of feedback collection. This process includes surveys, direct consultations with industry professionals, continuous dialogue with industry experts, and a structured evaluation system. For instance, the module on freezing and refrigeration was introduced in response to a proposal from the industry. The University of Jendouba is also involved in this process, verifying and providing feedback for improvements.

During the meeting with industry representatives and alumni, experts found that ISBB enjoys strong cooperation and exchange with industry partners from various sectors, including state bodies, private companies, accreditation entities and research centres in Tunisia. The majority of the alumni in attendance are currently engaged in doctoral studies. Those working in the industry emphasise that there are excellent employment opportunities for graduates. They have the opportunity to find jobs related to their studies and, through internships, to establish contact with the industry. In addition, industry users emphasise the efficacy of communication between industry and institute. They also confirm that they are regularly asked about the necessary skills in the area and complete a satisfaction survey. The industry partners are committed to providing support as stakeholders and to continuing their collaboration with ISBB in the areas of internship and curriculum development.

The module descriptions provided by ISBB include learning outcomes for each module. Furthermore, the experts learn that students and staff have access to the learning outcomes through the LMS used by the institute. The module handbooks are not published on the website.

In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:

The objectives and learning outcomes of the degree programmes under review are described briefly and concisely. In the opinion of the experts, the objectives and learning outcomes reflect the targeted academic qualification level, are feasible and comply with the Subject-Specific Criteria of the Technical Committee 08. The intended competence profile further represents the level of qualification according to the European Qualifications Framework. Nevertheless, the objectives and learning outcomes need to be transparently anchored and published and thus be available to all stakeholders and interested third parties.

The experts further remark that the relevance of the objectives and learning outcomes is reviewed regularly. This process involves relevant stakeholders and takes into account demand on the labour market and societal needs. However, in order to collect meaningful data about employment rates and fields in which graduates typically work, an alumni survey or tracer study needs to be introduced. Additionally, the data gathered should be used to develop the programmes and assess the extent to which courses offered have equipped students with the necessary skills for professional life, and identify areas where additional training may be beneficial (see also below **Criterion 5**).

Criterion 1.2 Name of the Degree Programme

Evidence:

- Self-Assessment Report (SAR)
- Samples Graduation Diploma and Diploma Supplement
- Discussion during the audit

Preliminary assessment and analysis of the experts:
The titles of the degree programmes follow the rules for naming bachelor's and master's degree programmes set by the Tunisian MHESR. The original names are in French, since this is the language of instruction for all study programmes:

ISBB emphasizes that the names of the study programmes were chosen in consultation with relevant stakeholders to adequately reflect their respective aims, learning outcomes and curricula. The nomenclature of the three programmes is congruent with the

terminology employed within the domain of food science and technology, adhering to both national and international naming conventions.

In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:

The expert panel agree that the names of the programmes under review accurately reflect their intended aims and learning outcomes. The programme names are well recognised in both English and French, and are consistent with the main course language of each programme. In addition, they are used consistently in all relevant documents and on the website.

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report (SAR)
- Module und PLO Matrix for each programme
- Module handbook for each programme
- Study Plan for each programme
- Internship agreement
- Discussion during the audit

Preliminary assessment and analysis of the experts:
Content and structure of the curriculum

The **Bachelor programme Food Science and Technology** offers two specialisations: **Food Quality Control (FQC) and Food Industry and Processing (FIP)**. The programme is designed to provide students with the essential scientific and technical knowledge required for a career in the food sector. Graduates are equipped to apply their expertise in quality assurance, food safety and industrial processing while demonstrating effective communication, professionalism and entrepreneurial skills. It prepares students for roles in the food industry, such as laboratory technician, quality control technician or processing technician, and offers a pathway to further education at the master's level.

Both **FQC** and **FIP** include a common core of four semesters (S1-S4) with 27 fundamental modules (66 ECTS). The courses in the first two semesters convey general knowledge in Natural Sciences and Mathematics such as Applied mathematics, Physics, General and Organic chemistry, Animal and Plant Biology and Physiology, Cell and Molecular biology, Genetics, Biochemistry, General microbiology as well as Physicochemical analysis techniques. In semesters three and four, the curriculum focuses on subjects specific to

Food Science. The offered modules range between Food science, Food biochemistry, Enzymology, Food microbiology, Toxicology, Agrifood techniques, Applied nutrition, Process engineering, Bioprocess engineering, Unit operations, Food preservation techniques to Quality control management and Metrology. Additionally, the programme comprises two English-language modules (5 ECTS) in semester one and three, as well as courses on entrepreneurial skills (10 ECTS) and on information and communication technologies (5 ECTS) which provide a foundation in digital literacy and practical multimedia skills. Other courses are available to introduce students to the law and legislation that govern food regulation (3 ECTS) and central issues in bioethics and food security (2 ECTS). Finally, the Biostatistics and Bioinformatics module (1 ECTS) aims to equip students with the analytical skills essential for scientific research and data analysis in food science.

In the fifth semester, **FIP** includes modules in Processing and Technology of (i) dairy products, (ii) Meat, fish and eggs, (iii) Fruits, vegetables and cereals, (iv) Fats (v) Chocolate and sugar, (vi) Food packaging and conditioning as well as Quality-Hygiene. In contrast, **FQC** focuses on food quality control offering modules in Food traceability, Hygiene in food industry, Sensory analysis and rheology, Food quality preservation, packaging and conditioning, Standardisation, normalisation and certification. It includes also two modules in the Science and technology of animal and plant products.

From the second until the fifth semester, students of **both specialisations** are required to select two elective courses each semester. From the third to the fifth semester, these courses align with each specialisation.

FIP and FQC includes three types of internships: In the first and second years, students complete a one-month internship, while in the final year, they complete a 12-week internship. The first is a beginner internship in the company, scheduled at the end of the first academic year. It provides students with an essential introduction to company operations, organisation, professional life and socio-economic aspects of the food industry. In contrast, the second internship is an advanced internship in the company conducted at the end of the fourth semester. It offers students experience in the professional world, building on the knowledge they have gained in food science. Under the guidance of a company supervisor with expertise in the field, the student intern works on a specific project that typically involves solving a technical problem relevant to the company. The final semester of study is dedicated to completing an end-of-studies internship in a company (with the possibility of an extension, depending on project requirements). This is followed by the preparation and defence of a thesis.

The **Professional Master in Dairy and Meat Products Technology (DMPT)** is a two-year study programme designed to develop advanced expertise in the field of dairy and meat science, with a particular focus on innovation, food safety, sustainability and leadership. The initial three semesters are dedicated to specialising in the chosen field, concluding with a four-week internship and leading to the preparation and defence of a master's thesis. Two English language modules (4 ECTS each) are also offered in the first and second semester. These modules focus on developing students' proficiency in scientific as well as business English. Modules related to fundamental and advanced concepts in business and innovation foster students' entrepreneurial skills (8 ECTS).

The first semester includes core knowledge areas such as Physiology of Lactation and Dairy Breeds Health and Management which are essential for understanding the biology of milk production livestock welfare. Milk Microbiology and Microbiology of Meat Products address microbial dynamics critical for product quality and safety. Industrial Health, Safety and Environment and Standards, Legislation and Traceability of Food Products cover quality management and regulatory frameworks governing food production. In the second semester, more specialised areas of advanced animal, dairy and meat sciences are included. Courses such as Biotechnology and Genetic Improvement of Livestock and Livestock Reproductive Technologies deal with genetic and reproductive approaches in the management of livestock. Advanced chemical and biochemical analysis of food composition and quality is emphasized in Physico-Chemical Analysis of Milk and Meat Products and Food Biochemistry II. Students engage in product design and production processes in modules such as Dairy and Meat Products Formulation and Innovation Process and Dairy and Meat Product Technology. The third semester focus on advanced dairy and meat products technologies, including Cheese- and Butter-Making Technologies and Biotransformation in Milk. Properties of Meat Products and Processing of Meat Products deal with the characteristics and processing techniques of the meat product. Nutritional Value of Milk and Meat Products and Safety and Toxicology of Dairy and Meat Products address the nutritional and safety aspects of foods.

Each semester, students select two elective courses to complement the core modules. These courses offer students the opportunity to gain in-depth knowledge and develop specific skills in focused areas. Two kinds of internships are also included: A one-month first-year internship and a 16-week internship in the final year. This hands-on experience enables students to engage in professional challenges, contribute to industry projects and refine technical, analytical and interpersonal skills essential for a successful career in meat and dairy products technology.

The experts raise questions about how the internships are organised and assessed. The programme coordinators explained that ISBB supports students in securing appropriate

placements by providing access to a company database. Each internship requires a formal agreement. There is supervision by both industry and academic mentors, as well as structured assessment processes. Regarding the duration of the internships, it is clarified that the first and second internship last approximately one month and take place during the summer break after the first and second academic years, respectively. The third internship takes place during the academic year as part of the final graduation project.

Regarding the first internship offered as part of the Bachelor's programme (**FQC** and **FIP**), the experts observe that it is not included in the study plans and ask whether this internship is optional or mandatory. The programme coordinators explain that it is mandatory and that it is awarded 4 ECTS credits. Taking place in the summer after the first academic year, the internship is designed to introduce students to the socio-economic environment of the food industry. They also clarify that its primary objective is to introduce students to the industry and help them understand real-world working contexts. There is no specific technical focus, and students are expected to observe, reflect on and report on their experiences. Students must prepare a report and presentation on the internship. These are reviewed and graded by a committee comprising the programme president, the academic supervisor, and the internship coordinator. For the second and third internships, the projects are more complex and are evaluated based on progress reports, supervisors' feedback and final validation. The topic of these internships must be validated by an academic supervisor and aligned with the student's field of study. The final project must reflect the student's area of specialisation and demonstrate the theoretical knowledge they have acquired.

Furthermore, the experts identified discrepancies and ambiguous aspects concerning the nomenclature and content of certain individual modules. For instance, in **DMPT**, they do not see a link between the topics covered by the module "Standards, legislation, and food traceability". In addition, no references were found to artisan or drawer products. With regard to **FIP**, it appears that modules such as homogenization of milk are not included in the curriculum (Mechanical processes). The programme coordinators explain that these topics are included in the third and fourth-semester courses "Specialisation processes". It also appears that there is an absence of specific quality management systems for food in the module quality control management section.

Students participating in the discussions have indicated a high level of satisfaction with the programme and the diversity of subjects. The internships, practical work and lab work are highlighted as very positive aspects of the programme. Students are satisfied with the balance between theoretical knowledge on the course and the opportunity to apply this in a practical environment.

Student mobility

As stated in the SAR, ISBB participated in the Erasmus+ programme project entitled BiotechTunisia. The aim of this project is to modernise higher education, consolidate the quality of teaching within the four Tunisian Higher Institutes of Biotechnology. A bilateral collaboration involving Université Paris-Saclay, Université de Reims, Université de Pau and Université de Dijon is currently in planning stages. Students would have the opportunity to study for one semester or a full year at one of the partner institutions, with the potential to gain transferable credits that count towards their degree programmes in Tunisia.

Due to restricted funding and scholarship opportunities, ISBB explains that students' mobility is mostly restricted and mainly in the form of Master's internships. Following the restrictions related to the pandemic, only one master's student has participated in an international internship, which was conducted at a French company. During the on-site discussions, the institute's management representatives outline their strategy of opening a mobility window for students, with a focus on increased participation in international projects.

With regard to international student intake, ISBB has welcomed a number of students from Africa in recent years. It is further explained that certain modules are delivered in English, including in the area of quality management. The institute's management is willing to consider offering more courses in English in future. Furthermore, the director of the institute states that one strategy being pursued is to open an international master's programme in collaboration with a university in Spain. Experts consider this to be a very positive step towards integrating the master's programme into an international one.

The students interviewed indicate that, in general, mobility is possible for internships. However, they suggest that more opportunities to study abroad for a semester would be beneficial, and that enhancing financial support and scholarship opportunities for international mobility would be advantageous. They emphasise that the lecturers are very supportive, encouraging them to consider international opportunities.

Periodic Review of the Curriculum

As stated in the SAR, each educational programme undergoes comprehensive review every four years. Stakeholders from both within and outside the organisation are systematically involved at multiple stages of the curriculum development and review process.

The programme is submitted online for evaluation by the Pedagogical Committee of the University of Jendouba. Following approval, the application is then referred to the Sectoral National Commission (NSC) for further evaluation. The NSC may consult external experts and request additional clarifications. Final authorisation is granted based on alignment with

national academic and professional standards. After that, an implementation plan is developed, including communication strategies, student recruitment and scheduling. The responsibility for overseeing delivery and ensuring operational readiness lies with the department heads. Subsequent to implementation, the Quality Committee will oversee periodic reviews, stakeholder surveys, performance indicators and external audits. The data are compiled and synthesised in order to identify recurring issues or strengths.

The Quality Committee is responsible for analysing curriculum-related feedback, surveys and appeals as part of its continuous improvement process. Feedback is first sorted into thematic categories. These include the relevance of programme content to industry needs, overlap or gaps between modules, coherence and progression in learning, and the supervision of internships and theses. Quantitative indicators, such as student satisfaction ratings, are averaged and benchmarked against internal target performance levels. All proposed changes follow a clear validation pathway involving the Pedagogical Committee, the Scientific Council and, if required, the MHESR. Once approved, changes are implemented and monitored through relevant performance indicators, regular pedagogical meetings and external evaluations or audits.

In their summative evaluation of the curriculum, the ASIIN expert team comes to the following conclusions:

Overall, the experts conclude that the curricula of all programmes under review are well structured and enable students to achieve the intended learning outcomes. The programmes offer a balanced approach to theory and practicals, ensuring a comprehensive learning experience. The electives offered provide opportunities for individual focus. In the module handbooks, learning outcomes for each module are clearly defined. The experts confirm that all programmes under review have a curriculum that is periodically reviewed, revised, and updated in an appropriate manner, with all relevant stakeholders being integrated.

Nevertheless, in certain instances, the nomenclature of the modules employed may not be precise and consequently obscures the true content of the module. Some new topics could also be integrated e.g. ISO IEC 17025. It is also recommended to integrate in the curriculum of both programmes under review contents related to sustainability and climate change. Therefore, they conclude that the description of the modules of all programmes under review need to be revised and updated according to the current scientific and industry developments and ensure that the naming of the modules corresponds to the content (e.g. module about quality management system, food safety management systems). In addition, all mandatory components of the curriculum need to be included in the modules

descriptions (including electives, internships and final thesis) and considered for the students' workload (see also below **1.5** and **4.1**).

Based on the students' feedback, the experts are also of the opinion that, for all programmes under review, the courses in English language should be increased. Furthermore, it is recommended to enhance the internationalization strategy by stronger support for international mobility of the students as well as more exchange and cooperation with foreign institutions and lecturers.

The collaboration with the industry is viewed as a very positive aspect by the experts. However, it would be beneficial to integrate industry experts more closely into the courses, for example by inviting them to deliver workshops for the students. Additionally, an alumni survey should be introduced and these data also considered for the review and development of the programmes.

Criterion 1.4 Admission Requirements

Evidence:

- Self-Assessment Report (SAR)
- ISBB Rulebook
- Discussion during the audit

Preliminary assessment and analysis of the experts:
The admission requirements are contained in the ISBB rulebook and published and updated at ISBB website. ISBB explains in its SAR following procedures for the admission to undergraduate and Masters programmes:

"**Admission for Bachelor**: In Tunisia, the admission process to higher education is mainly controlled by a National University Orientation System (Systeme national d'orientation universitaire), which allows the holder of a "Baccalauréat" (the national secondary education Certificate) or equivalent Diploma to choose his university course, depending on the specialty of "Baccalauréat" obtained, scores and preferences. All university orientation operations are carried out exclusively via the https://www.orientation.tn/orient/ website. Then students can register via the https://www.inscription.tn/ portal. For admission into FIP and FQC bachelor's degree programmes, a "Baccalauréat" in experimental sciences or mathematics or equivalent Diploma is required. The admission criteria are published on the http://www.guide-orientation.rnu.tn/ guide website".

"Admission for professional Master: The admission process for professional master programme, including DMPT, refers to the provisions required by the Head of government Decree no. 2012-1227 of August 1, 2012, laying down the general framework of the system

of education and the conditions for obtaining national Master's degree in the LMD system. Candidacy to the DMPT master programme is open to holders of (i) national license diploma in the "LMD" system or an equivalent diploma or (ii) a diploma certifying completion of a university course lasting at least three (3) years after the "Baccalauréat". The president of University of Jendouba sets the number of places open for registration for the DMPT master's diploma within the limits of the supervisory capacities available based on a proposal from the director of ISBB after advice from the DMPT master's committee. Each year, the ISBB announces a call for enrolment (https://isbb.rnu.tn/fra/mastere/) into master's degree study programmes which recalls the admission requirements and details the admission schedule, the required documents, the procedures and the selection criteria. Registration for Student Selection is held online; the registration form (https://isbb.rnu.tn/fra/mastere/nouveau/) is accessible via ISBB website. The Director of ISBB declares admission for registration for the DMPT master's diploma, after evaluation and ranking of candidates by the master's degree committee, in accordance with the criteria it has set and which have been approved by the president of the University of Jendouba. At least 15% of the reception capacity must be reserved for candidates from other establishments. There is no alternative mechanism to compensate for the missing admission requirements. The DMPT Master's Commission may exempt students who hold diplomas attesting to a university education lasting more than three (3) years from continuing the courses and examinations relating to the units common to the master's degree concerned and the diploma obtained. Interview assesses whether eligible applicants meet the levels of knowledge, skills and competences that are required for admission. For the second year, candidacy is also open for students holding at least a 4-year degree, an engineering diploma or having successfully completed the M1 master's degree of a closely related programme. The candidates must meet all qualification requirements and no courses will be offered to acquire the necessary competences".

With regard to the admission of foreign students, this is subject to authorisation by the General Directorate of International Cooperation of the Tunisian Ministry of Higher Education and Scientific Research (MHESR).

Students may request a deferral or withdrawal of registration due to personal or health issues. It is important to note that deferral is only valid for the academic year in question. Students granted a medical deferral must re-enrol in person no later than two years from the approval date. A one-time extension may be granted at the discretion of the relevant department, upon receipt of a written request.

The institute also explains that for DMPT, there were 74 applicants, of whom 35 were accepted. In contrast, the Bachelor's degree in Food Science and Technology received 50 applications, and all 50 students were accepted.

The admission process is subject to periodic evaluation to ascertain if there is a correlation between admission standards and academic performance. At this time, no such relationship has been established.

In their summative evaluation of the admission regulations, the ASIIN expert team comes to the following conclusions:

The admission rules are clearly described in the ISBB rulebook and provide potential students with detailed information on the requirements and steps necessary to apply for admission to the programmes. As they are based on official regulations, the experts consider them to be binding and transparent. They confirm that the admission requirements support students in achieving the intended learning outcomes.

Criterion 1.5 Workload and Credits

Evidence:

- Self-Assessment Report (SAR)
- Module handbook for each programme
- Study Plan for each programme
- Discussion during the audit

Preliminary assessment and analysis of the experts:
At ISBB, a credit system is used based on the student workload. Credits are awarded for every module based on the respective learning outcomes and workload. This workload encompasses all learning activities. The individual work element encompasses the completion of work and practice reports, which may be undertaken individually or collaboratively. Each semester comprises 14 weeks of class attendance, with one week allocated for the final semester exam. An additional week per year is allocated for exam retakes, providing students with the opportunity to improve their performance in any failed components. Each year, with the exception of the final year, four additional weeks are allocated for internships.

The **Bachelor programme** with it two specializations, **FIP and FQC**, comprises three years of study and 180 ECTS. The **DMPT** programme is a two-year course, with 120 ECTS credits allocated over four semesters. DMPT comprises modules totalling 120 credits, including the master's thesis. The programme comprises fundamental modules (54 credits), transversal modules (16 ECTS), and elective modules (16 credits). Finally, the one-month internship, which takes place at the end of the first year, is awarded 4 ECTS. In addition, 30 ECTS are allocated for the Master's final project.

Each semester comprises 11-12 modules for DMPT and 10-12 modules for FIP and FQC, grouped into five to six teaching and learning units representing 30 ECTS. Following table shows the distribution of the typical workload across all semesters:

Semester	Contact hours	Self-study hours	Total workload	ECTS
FIP/FQC				
S1	371	384	755	30
S2	350	403	753	30
S3	343	428	771	30
S4	329	454	783	30
S5	329	452/458	781/787	30
S6		750	750	30
TOTAL				180
DMPT				
S1	343	430	773	30
S2	350	417	767	30
S3	350	443	793	30
S4		900	900	30
TOTAL				120

According to ISBB, the percentage of students who begin their studies and successfully graduate with a degree within the expected timeframe during 2021-2024 is 100% for **FIP** and **DMPT**. In contrast, the completion rate for **FQC** was 97.43% in the 2023/2024 period and 100% in the other years.

As stated in the SAR, at the conclusion of each semester, the correspondence of the credits awarded for each module to the actual student workload is monitored. As stated in the SAR, this procedure will be further refined through the collection of information during contact sessions held on a bi-weekly basis, thereby enhancing its precision.

During the discussions, the experts clarify the monitoring procedures of students' workload. The programme coordinators explain that the students' feedback at the end of the semester has shown great variability, making it difficult to determine the real workload for each study programme. Therefore, a method was introduced to select three or five students as representatives for each class, and to take their feedback regarding workload as a basis.

Furthermore, with regard to internships, experts observe that the first internship in the first year of the **Bachelor's programme**, **FIP or FQC**, is not included in the study plan. The programme coordinators confirm that this is not optional, but mandatory for all students, and is awarded with 4 ECTS.

The students interviewed feel that the workload is manageable. They have sufficient time for both study and preparation.

In their summative evaluation of the workload, the ASIIN expert team comes to the following conclusions:

The credit system used by ISBB is based on student workload. The workload is divided into contact hours and self-study time. Furthermore, the completion rates are consistently high. However, the experts conclude that ISSB needs to implement a system to regularly monitor whether the credits awarded for each module of all programmes under review correspond to the actual student workload (e.g. an additional workload survey for each module or specific questions regarding workload in the teaching evaluations or surveys for each course). In addition, the programme coordinators mentioned the existence of a survey to assess the individual students' workload, but the students were unaware of this. The experts would therefore appreciate clarification on this point, and a sample of the students' workload survey in question as well as analysis or report on the results derived from this survey.

Furthermore, it is essential that all compulsory components of the study programmes are included in the workload calculation. A revision of the study plan and workload is imperative. The first internship in the Bachelor programme (**FIP and FQC**) must be awarded credits, as it is a compulsory component of the study programme.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Self-Assessment Report (SAR)
- Module handbook for each programme
- Study Plan for each programme
- Guidelines for writing the final year project thesis
- Discussion during the audit

Preliminary assessment and analysis of the experts:
A variety of teaching instruments and methods are employed to support the achievement of the LOs for each study programme under review. Problem-solving activities and laboratory practicals are carried out in small groups, facilitating continuous work. The small class sizes facilitate visits to companies and facilities, as well as group work.

Active, student-centred and problem-based learning models are utilised to assist students in strengthening their problem-solving skills in relation to specific courses, and to cultivate

their abilities in areas such as argumentation, critical thinking and course material discussions. In DMPT, some teachers have introduced flipped classrooms with a view to increasing student engagement and encouraging them to take ownership of their learning. Most modules include theoretical courses as well as laboratory practice related to the theoretical teachings. This allows students to gain hands-on experience and apply theoretical knowledge, as well as develop experimental skills. In addition, students are given the opportunity to participate in extracurricular activities.

The Pedagogical Committee support management's efforts to develop student-centered learning methods and focus on offering the required pedagogical support to enhance present teaching methods.

In their summative evaluation of the workload, the ASIIN expert team comes to the following conclusions:

The experts appreciate the diversity of teaching methods and believe that they ensure that the course objectives and the overall intended learning outcomes are achieved. However, following the on-site visit and taking into consideration the feedback provided by both the lecturers and students, it is the opinion of the experts that the provision of more courses delivered in English should be considered and, for example, that incoming students be permitted to take at least one semester credit in English. The training of scientific English needs to be enhanced (for example, presentations in English, research proposal etc.).

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

ISBB states that the course objectives and learning outcomes are published transparently and made available to all stakeholders on the institute’s official website, providing the corresponding links. Experts confirm that these are indeed published transparently and are accessible to all stakeholders.

Furthermore, the institute clarifies that an alumni survey was conducted and that the results of the survey have been analysed. The results are presented in clear graphical form. The majority of respondents (75%) attributed unemployment to a "lack of help finding a job" and 20% to "lack of job offers. The experts are satisfied with this clarification. However, the generic action plan could be improved and specified. No tools or provisions are described for the improvement plan. The data from such an important survey should be analysed using relevant data analysis tools. Furthermore, a comprehensive improvement plan, incorporating a combination of corrective and preventive actions, should be developed in collaboration with relevant stakeholders.

In its statement, ISBB also comments on the curriculum observations of the experts and states that a revision of the module contents of the programmes under review was made. The content of some courses was complemented and updated, and new elective courses were added. For instance, an elective module, "Sustainability and climate change" for bachelor's degree students in Semester 2 (2026) will be introduced. The module focuses on climate science fundamentals, circular economy principles and SDGs as applied to food systems, incorporating key environmental management frameworks including ISO 14001 standards (please see 1.3 'Sustainability and climate change module'). Furthermore, the institution has acknowledged the expert recommendations regarding the revision of module titles to ensure they accurately reflect current course content and industry terminology. However, ISSB explains that all compulsory course titles are formally registered within the national examination database and mark script system. Therefore, a formal approval by the Ministry of Higher Education and Scientific Research (MHESR) for any modifications is required to ensure the validity of academic records and certification documents. The experts acknowledge the revision and update of the module handbook, and confirm that all compulsory components of the curriculum are now included. However, as the update of the course titles requires approval from the Ministry and cannot be implemented yet, this requirement is maintained in place. In order to prevent any potential confusion, the experts recommend that attention be paid to certain titles, including: For **DMPT**: M6: There is no clear connection between the elements in the title "Standards, Legislation, and Food Traceability"; M15: the numbering suggests a second part, but there is no corresponding "Food Biochemistry I."; M24: Fermented and Artisanal Dairy Product Technologies: Title that needs to be clarified (combination of a generic qualification "fermented product" with a very specific one "artisanal products"). For **FIP**, some titles are overly generic, such as M02 Physics, M35. Agrifood Techniques. Certain modules appear to be unnecessarily separated, such as M11. Agri-food Law and M52. Food Legislation. These topics might be more effectively presented as a single integrated module.

With regard to workload monitoring, ISBB clarifies that the most recent student survey for each module was conducted in late June of the 2024–25 academic year using Google Forms. A sample of the questionnaire and an analysis of the results are provided. The survey included two questions specifically about workload. In some modules, the workload was reduced. For the 2024–25 academic year, the survey was refined to use a relative scale instead. Students were asked whether their self-study time was less than, equal to, or greater than the number of contact hours. While this format reduced ambiguity and revealed broad trends, as stated by ISBB, the data remained insufficiently granular for precise workload validation. To address this, an additional workload tracking method will be introduced in the 2025–2026 academic year: a representative sample of 20% of students

per course will be asked to maintain a weekly workload logbook over the semester. These records will capture real-time estimates of self-study activities and will be cross-checked with course syllabuses, instructor expectations, and student performance data. These measures for monitoring students' workload are generally approved of by the experts. In addition, ISBB confirms that all compulsory elements of the Bachelor study programmes, including internships, are fully integrated into the overall workload and ECTS calculations. Although the first internship in both the FIP and FQC programmes is carried out during the summer period between the first and second academic years, its workload and corresponding credits are formally allocated in the study plan for Semester 4 of the second year. For clarity, this is now specified in the updated study plans. The experts acknowledge these explanations and consider them to be clear and satisfactory.

Finally, following a thorough review of the module descriptions and the alignment matrix of the EQAS LOs with the subjects, the experts confirm that the learning outcomes and curricular contents are with more than 80% aligned with the subject-specific EQAS-Food criteria for the Bachelor's programmes in Food Quality Control and Food Industry and Processing, as well as for the Master's programme in Dairy and Meat Products Technology.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, Concept and Organisation

Evidence:

- Self-Assessment Report (SAR)
- Exam rules and regulations
- Exam monitoring plan
- Exam schedule plan
- Minutes of the Final Project Defense (Procès – Verbal de Soutenance de Projet de Fin d'Etudes)
- Module handbook for each programme
- Study Plan for each programme
- Guidelines for writing the final year project thesis
- Samples of exams and final thesis
- Discussion during the audit

Preliminary assessment and analysis of the experts:

As stated in the SAR, the summative evaluation system includes two main approaches following the MHESR regulations: (i) a mixed assessment regime that combines continuous assessment with final semester exams (followed by a single remedial session/academic year) and (ii) an exclusive continuous assessment regime. In the mixed framework, final exams contribute 70% of the final grade (through written exams) while continuous assessment accounts for the remaining 30% divided as follows: 20% for in-person exams, including practical work when applicable, 10% for other types of assessments (written and oral and examinations, working reports and workshops). The evaluation system based solely on continuous assessment includes various forms of exams set by the academic structures of the institute, such as supervised assignments, practical work, exercises, oral exams and presentations. The continuous assessment system is weighed as follows: 80% for in-person exams or equivalent assessments, 20% for other types of assessments.

The date of all exam sessions is set at the beginning of each academic year by the ISBB Director after consultation of the scientific council and approval of the president of the UJ. The number and timing of exams are carefully planned to allow sufficient time for exam preparation and to ensure that the workload is reasonable. Students are notified 1-2 weeks in advance of each assessment date via the ISBB Extranet. The final semester exam is

arranged during the examination week at the end of each semester. These exams are organized into two sessions: a main session at the end of each semester and a remedial session open to students who were not declared admitted to the main session. This session will take place one week after the announcement of the results of the main session of the second semester of each academic year. For final year students, the remedial session will take place one week after the announcement of the results of the main session of the first semester of the final year. As outlined in the SAR, a standard semester comprises six to seven final exams enabling students to focus on one exam per day.

Upon completion of the early and advanced internships, students are required to submit an individual internship report and their internship journal. The Internship Director is responsible for reviewing the internship journal, and the internship report is then validated by a jury which assigns a score on a scale from 0 to 20. Should the jury determine that the internship is invalid, the student will be required to undertake the internship again. The process will be conducted and evaluated under identical conditions.

With regard to the thesis internship, students are expected to work independently on a clearly defined topic in a company or a research laboratory. They will receive joint supervision from an academic advisor at ISBB and a professional supervisor at the host institution, where applicable. Following the completion of the work, students are required to write a formal thesis which present their methodology, results and critical analysis. The thesis is evaluated on the quality of the work performed and the student's ability to reflect academically on their experience. At the end, a public defence takes place before a jury comprising a president, an examiner, the ISBB academic supervisor, and, if available, the external (professional) co-supervisor. Students who have not yet completed their internships or successfully defended their bachelor's or master's degree may be eligible for an exceptional extension, with a maximum duration of three to six months. All submitted theses are checked for similarity by the Internship Director, ensuring that the similarity index does not exceed 25%. ISBB utilizes tools such as Turnitin to detect instances of plagiarized content.

To support learners with special needs, the institute verifies these cases and provides suitable compensation during exams such as flexible exam conditions, extended time for students (one-third of the standard exam time) with learning difficulties, adjusted classroom seating or relocation of exams to accessible rooms for students with mobility challenges. In addition, alternative formats for course materials, including enlarged print versions, are provided to support students with visual impairments.

Exam grading is conducted through a process of anonymous marking. The lifting of anonymity and entry of grades are automated through the Smart Exam application, which

is managed by the IT department. The grades achieved in each subject are presented as absolute numbers on a scale from 0 to 20. The grades are defined as follows, according to the Diploma Supplement:

“Mention Passable”: the average is equal to or higher than 10/20, but lower than 12/20.

“Mention Assez Bien”: the average is equal to or higher than 12/20 but lower than 14/20.

“Mention Bien”: the average is equal to or higher than 14/20 but lower than 16/20.

“Mention très bien”: average is equal to or higher than 16/20.

Students can access their exam results via the ISBB extranet. A formal re-evaluation policy is in place that allows students to request a review of their exam grades within seven days of receiving their results. The purpose is to verify the accuracy of the assigned grade in the presence of the instructor. Errors identified during the re-checking process will be rectified in accordance with the established formalities. All appeals are meticulously documented and reviewed to ensure a fair and transparent grading process. In addition, students will have access to the grading rubric and answer key for all assessments.

Students participating in the discussions indicate that the exam schedule and organisational framework are manageable. They confirm that there is only one exam scheduled per day and that the correction of the exams is both timely and very convenient. Furthermore, in contrast to the information provided in the SAR, the experts learn from the students that there is more than one week for the exams: Three or four exams are scheduled from Wednesday to Friday, with the remainder taking place the following week (after the weekend).

In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:

An evaluation of samples of examinations and final thesis reveals that the academic performance of the students and the content of the modules meets the necessary standards for the programmes in question. The final thesis are of an adequate level and demonstrate that students are able to work independently. Furthermore, the experts believe that the number and distribution of examinations ensure an appropriate workload and sufficient time for preparation. Nevertheless, the experts are of the opinion that the final thesis should include an English summary.

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

ISBB states that all final theses already include an English summary. However, in some of the samples reviewed by the experts, the abstract appeared on the penultimate page rather than in a more prominent position. The institution will take steps to standardise the placement of the English abstract at the beginning of the thesis and the ultimate page. Furthermore, a proposal to require that all Bachelor's and Master's theses be written entirely in English is currently being prepared. The experts appreciate the measures planned and recognise the value of the explanations provided.

3. Resources

Criterion 3.1 Staff and Development

Evidence:

- Self-Assessment Report (SAR)
- Module handbook for each programme
- Staff handbook
- Teaching and administrative staff oversee trainings
- Training sessions for academic staff
- Discussion during the audit

Preliminary assessment and analysis of the experts:

The **Bachelor programme (FIP and FQC)** comprises 37 teaching staff: Two professors, four associate professors and 28 assistant professors, of which 15 are full-time, 11 are contractual and two are adjunct. Of these, 28 hold a PhD, while three lecturers hold master's degrees. **DMPT** teaching staff consists of 26 members, of whom 17 are full-time. Three of them are professors, four are associate professors and 18 are assistant professors. One of them is a lecturer. It is important to note that the student-to-staff ratio is 1.2 in the FIP, 2.3 in the FQC, and 1.1 in the DMPT degree programme.

The recruitment process for new teaching staff at ISBB involves conducting a needs analysis for each department, taking into account staff departures and workload. New teachers can be recruited through two main schemes:

1. Full-time teacher-researchers, which follows the recruitment schedule set by the MHESR: Candidates are evaluated based on their achievements, including scientific contributions, student supervision, teaching effectiveness, and other supporting activities. They also undergo an admission interview (excluding professors) with national recruitment juries. A doctoral degree is required for recruitment as an assistant professor, while both a doctorate and a university qualification equivalent to HDR are necessary for associate professors and professors. This year, eight full-time Assistant Professors were successfully recruited.
2. Assistant Professor positions on a fixed-term contract, which are managed by the University of Jendouba: The evaluation and selection criteria focus on candidates' competencies and the scientific relevance of their work, as well as an admission interview. Twelve contractual Assistant Professors were recruited this year.

Several lecturers are engaged in research within the fields of food science and food technology. Students are also engaged in these research initiatives through their Bachelor's and Master's theses. Furthermore, the research findings are incorporated into the courses and play a significant role in shaping the curriculum. The results of these research activities are disseminated through seminars and publications in international journals. ISBB also encourages all academic staff to attend national and international congresses and conferences.

The institute's management emphasizes that there are several professional development training opportunities available, including those related to teaching skills, administration, anti-plagiarism software, various ISO standards, and activities within the European CBHE (Capacity Building in Higher Education) project under the Erasmus+ Program. Furthermore, there is training on using innovative teaching methods in the courses and educational international projects such as EDUGAME, to train teachers in pedagogical technologies. Newly recruited teachers are mentored by senior academic staff and mentor graduate and undergraduate students on their final projects. In addition, it was announced by the institute's management that training in artificial intelligence will be provided to all staff members, including administrative staff.

Full-time assistant professors, associate professors and professors may be granted permission to take a one-and-a-half-month study leave every two years. After six years, they can combine these study leaves for a maximum of nine months. Full-time teachers may be assigned scientific research duties for a period of two years, renewable once.

During the on-site discussions, the lecturers confirm that they feel supported by the university and faculty, and that several training and development opportunities are available. The experts inquire about the Pedagogical Committee, the frequency of its engagement, and the scope of its functions. The lecturers explain that regular meetings are held to improve the curriculum, exams, validate practicals etc. The committee is also contacted in case of problems or to discuss the results of evaluations.

In terms of support for research activities, the teaching staff who were interviewed stated that funding is available from the Ministry to a certain extent. Some of them have secured additional funding independently by attending international conferences. Overall, they feel that the support provided by ISBB for research, international conferences and facilitating international collaboration is adequate.

In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:

The number and academic specialisation of the teaching staff are appropriate for the successful implementation and sustainability of the two programmes under review. The university and the faculty support their staff and provide adequate opportunities for professional and pedagogical development. According to the experts, the institution has demonstrated a noteworthy commitment to professional development by offering training in innovative teaching methodologies. Moreover, the institution has expressed its intention to provide training in artificial intelligence (AI) to all institute's members. However, the experts are of the opinion that ISBB should allocate more funds to enable lecturers to attend international scientific conferences.

Criterion 3.2 Student Support and Student Services

Evidence:

- Self-Assessment Report (SAR)
- ISBB Rulebook
- Career Center 4C-ISBB Guide Book
- Trainings for students
- Discussion during the audit

Preliminary assessment and analysis of the experts:
As stated in the SAR, ISBB supports students in the event of academic or personal issues that may affect their progress. Teachers offer regular office hours and individual appointments to address academic concerns and track progress, and provide guidance on assignments, feedback on coursework, managing workloads, planning academic paths, and identifying opportunities for specialisation.

A dedicated listening cell is also available for ISBB students, where skilled counsellors offer online or in-person support to students facing personal challenges that could impact their progress. All interactions with the listening cell and psychological services are strictly confidential. For students in the later stages, career advisors assist students in identifying and pursuing career opportunities. The ISBB 4C Centre (Career and Competency Certification Centre) offers training to students, as well as providing assistance to those seeking a job or internship, including students and graduates. The 4C envisions fostering food self-sufficiency in Tunisia through innovative student start-ups in the field of plant and animal production. Its objective is preparing the student for a smooth transition to active life through various activities such as trainings and partnerships with international universities.

Moreover, ISBB organize extracurricular activities and trainings for students. Students also have access to numerous clubs, which offer platforms for networking and the development of both personal and professional skills.

ISBB is committed to ensuring that students with disabilities or specific educational needs have equitable access to all academic and campus activities and that its physical infrastructure is accessible to all students. Any student with recognized special needs must fill out a specific needs form, available at the Student Services Office or on the institutional portal. Based on the information provided, the administration will assess the student's needs and determine appropriate compensations in collaboration with the relevant teaching staff. Individualized learning support when required is also provided.

During the discussions on-site, students confirm that there is always an academic advisor available to work with them on any questions or problems. They value the co-working space provided and highlight that the administration is also very helpful. They appreciate the listening cell service and the institute's and lecturers' support to find job opportunities.

In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:

ISBB provides excellent support for students, addressing various needs including job options, academic challenges and personal issues. Furthermore, the institution offers comprehensive support for disabled students. The experts note that students typically enjoy a very good relationship with their teachers. The support system helps students to achieve the intended learning outcomes and to complete their studies successfully and without undue delay. Students are well informed about the services available to them. The experts conclude that the guidance and mentoring system in place is of a high standard.

Criterion 3.3 Funds and equipment

Evidence:

- Self-Assessment Report (SAR)
- ISBB Budget
- Main Lab Equipment
- Sample of agreements with industrial partners
- Sample of agreements with partner institutions
- Discussion during the audit

Preliminary assessment and analysis of the experts:

ISBB uses a diverse funding approach to secure its funding through a mix of tuition fees, government allocations, grants and industry collaboration. The income and expenditure are provided in the ISBB budget. It shows different financial sources such as the research project within the framework of Tunisian-Algerian cooperation, National Research projects and World Bank funds.

As stated in the SAR, analysis of satisfaction surveys conducted among students and ISBB staff suggests that they are highly satisfied with the quality and availability of the facilities. Should bottlenecks arise, the institute is able to manage resource allocation readily and flexibly. Priority is given to purchases or repairs to minimise the negative effects on coursework or research activities. Access to specialised equipment is available through existing external collaboration and shared use agreements with partner institutions and industry in the event of an immediate need.

The library offers a wide range of programme-related resources, including digital materials, to support the learning needs of students and the teaching and research activities of ISBB members. Recent investments have been made to enhance educational infrastructure and student facilities. In particular, TND 2.5 million was allocated for the purchase of laboratory equipment. A further TND 0.8 million was used to upgrade the cafeteria and the Doctoral School. An additional TND 1m is planned for the construction of extra classrooms and an amphitheatre to meet growing academic demand.

All laboratories are equipped with adequate instruments to support students in completing the practical activities required by each course and in conducting research. Each laboratory can accommodate 10-12 students.

During the on-site visit, the experts inspect the university's facilities, library, computer rooms, and laboratories. They visit among others following labs: Functional Physiology and Bio-Resource valorisation, Fermentation, Microbiology, Chemistry lab, Genetics lab, Biology, Cheese manufacturing etc. Each lab can accommodate 10-12 students. In addition, the programme coordinators state that there are enough technicians for the labs. Each lab is managed and maintained by a technician. The programme coordinators also clarify that students can request access to research labs. For bread and barley production, it is explained that there is collaboration with research centres.

In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:

ISBB has secure funding and reliable financial planning. Experts agree that the facilities are appropriate and promote teamwork, as demonstrated by the co-working spaces. According to the experts, the library is well equipped and also offers a selection of English books.

The laboratories are well-equipped, organised, and comprehensive instructions and safety guidelines are provided. Each laboratory is equipped with a register to record the usage of each tool. The institute is also equipped with secure storage facilities for reactors, with access limited to authorised personnel. The experts conclude that the labs are well-equipped and suitable for teaching purposes. The equipment is subject to regular maintenance. In addition, the experts appreciate the institute's flexibility to provide access to research labs to students. However, they recommend continuing to modernise laboratory equipment, particularly specialised equipment for research. Especially for process technology and the corresponding pilot plant facilities, reference is made to cooperation with industry.

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

ISBB states that funding for lecturer participation in international scientific conferences via international projects will be increased. The school also places significant emphasis on the Erasmus cooperation projects for 'Capacity building in the field of higher education'. The experts give a positive response to the plan to increase funds in this area and encourage ISBB to continue seeking options for increasing the international experience of its staff, allowing them to visit more conferences in the long term.

With regard to equipment, ISBB's strategy is to modernise specialist research equipment, with a particular emphasis on process technology, and to strengthen industry collaborations with a view to enhancing the capabilities of its pilot plant facilities through shared resources and expertise. The experts value these forward-looking plans.

4. Transparency and Documentation

Criterion 4.1 Module Descriptions

Evidence:

- Self-Assessment Report (SAR)
- Module handbook for each programme
- Discussion during the audit

Preliminary assessment and analysis of the experts:
As stated by ISBB, the module handbooks can be accessed through the ISBB Extranet and are accessible to all students and academic staff. The experts found that the module descriptions contain the required information for each module. It includes module title, level and code, semester of courses taken, person in charge/teacher, language used, relationship to the curriculum, teaching methods, credits and workload, prerequisite courses, requirements according to the examination regulations, course objectives, learning outcomes expected, module content, form(s) of exams and details explaining how the module mark is calculated, media used in learning, reading materials and last update date.

In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:

The experts note that not all modules are included in the module handbook. They therefore conclude that the module handbook for each programme under review needs to be updated. All compulsory and elective courses, including all internships, electives and final theses, must be included in the module descriptions. Furthermore, as mentioned above (see Section **1.3**), the module content must be updated, and the names of the modules must correspond to their content. If modules are delivered partly or fully in English, this information should also be included in the module handbook. Additionally, the module handbooks for all degree programmes under review should be published on the university's website, making them accessible to third parties.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Self-Assessment Report (SAR)
- Samples of diploma supplement, transcript of records and certificate

- Discussions during the audit

Preliminary assessment and analysis of the experts:
As stated in the SAR, all students who have completed their study programme and obtained the corresponding credits receive a transcript, a diploma as well as a diploma supplement. The Diploma is issued in the Arabic and French languages, and the template models are validated by the Ministry of Higher Education and Scientific Research. It mentions the training field, the course cluster, the track, the average obtained in the four (DMPT) or 6 semesters (FIP, FQC) of training, the number of credits and the grade awarded. The diploma supplement provides descriptive information on the knowledge and skills acquired by the student during his/her academic career.

ISBB provides a sample of the Diploma Supplement in French for the Bachelor's programme Food Science and Technology.

In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:

The diploma supplement must be provided in English and for both programmes under review. In addition, it needs to include data on the GPA distribution of graduates in the same cohort as set forth in the ECTS Users' Guide. This information should be included in the Diploma Supplement to assess the individual mark and ensure fair transfer and recognition of grades for mobile students.

Criterion 4.3 Relevant Rules

Evidence:

- Self-Assessment Report (SAR)
- ISBB Rulebook
- Exam rules and regulations
- Guidelines for writing the final year project thesis
- Discussion during the audit

Preliminary assessment and analysis of the experts:
As stated in the SAR, rules and guidelines set forth by the Ministry of Higher Education are the framework for obtaining a national bachelor's and master's diploma in the Licence-Master-Doctorat system, ensuring that each programme meets national standards.

All the regulations that affect ISBB qualifications are compiled and made accessible to students and staff through three main institutional documents: the ISBB rulebook, Exam rules and regulations and Guidelines for writing the final year project thesis. These

regulations are available at ISBB Extranet. Students are also informed of their availability during orientation and by academic advisors.

The students interviewed seem to be satisfied with the website and the academic intranet. They can find all information required on the website and are informed via email or LMS about the specific information or news to the courses.

In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:

The rights and obligations of both ISBB and the students are clearly defined and binding. Nevertheless, it is recommended that the institute and its programmes are presented more attractively to third parties and to enhance the English language version of the website.

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

ISSB provides updated module handbooks. The experts confirm that all compulsory and elective modules, including internships, are included. Modules that are delivered partly or fully in English are now clearly identified as such within each module description.

Samples of the Diploma Supplement in English are provided. These include now data on the GPA distribution of graduates.

It is also stated that the website is undergoing an update process. The experts recommended that ISBB continue to update the website and its English version, and improve the presentation of the programmes.

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

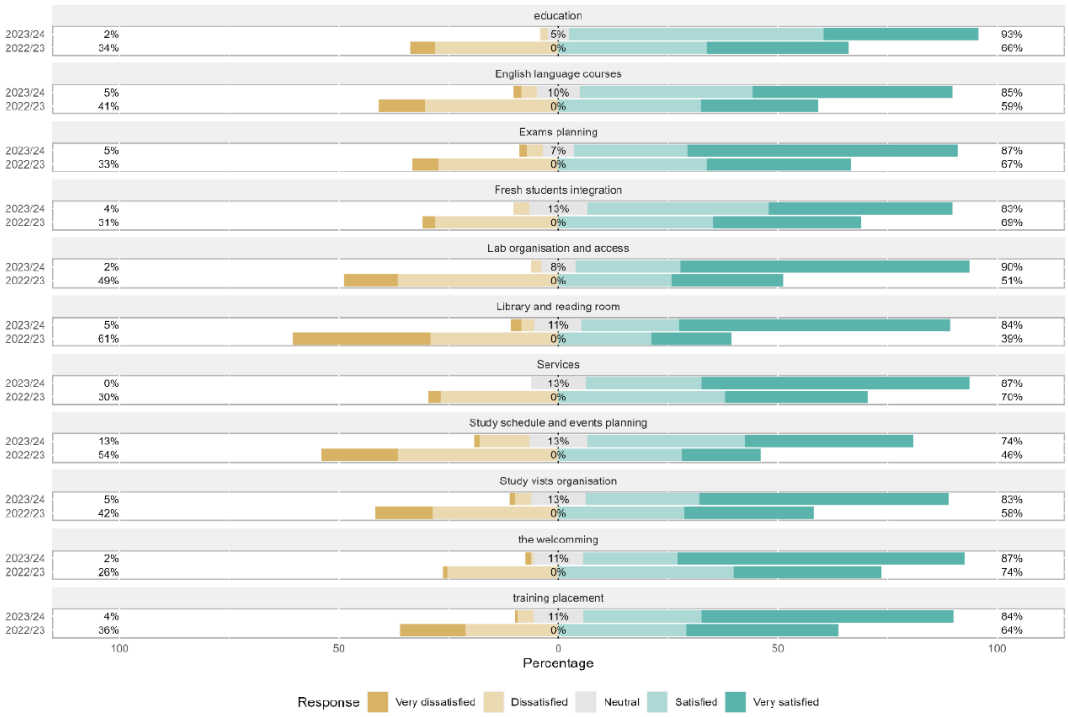
- Self-Assessment Report (SAR)
- Industrial partners satisfaction infography
- ISBB Rulebook
- Discussion during the audit

Preliminary assessment and analysis of the experts:
As stated in the SAR, ISBB's quality assurance system includes internal and external quality assurance procedures.

The internal quality assurance is managed by the Quality committee (QC). Regular feedback from students, staff and industrial partners is collected to identify and address issues within the programmes. Students can provide feedback on courses, teaching methods and academic support through surveys and focus groups and are also represented in the ISBB Scientific Council, enhancing transparency and their influence on improvements.

As stated by ISBB, the student satisfaction surveys conducted during the 2022/23 and 2023/24 academic years demonstrate clear and consistent improvements in almost all evaluated areas. The most significant progress was noted in categories that had previously received the lowest satisfaction ratings. For instance, satisfaction with the library and reading room increased from 39% to 84%, while the proportion of respondents who were "very dissatisfied" dropped sharply from 61% to just 5%. Similarly, satisfaction with laboratory organisation and access increased significantly, from 51% to 90%. The highest satisfaction levels in 2023/24 were reported for general education (93%), laboratory organisation and access (90%), exam planning (87%), and the process of welcoming new students (87%). These results suggest that the actions taken in response to previous student feedback were effective and well-received.

Following sample of the results of the students' satisfaction survey is provided by ISBB:



ISBB highlights that the quality assessment processes have effectively addressed teaching challenges, including resource requirements and student support needs. Some of the measures taken are mentioned in the SAR, such as continuous professional development programmes for teaching staff to ensure they are equipped with the latest teaching methodologies, and the implementation of a new examination system via the Smart Exam system management application.

In addition, annual reviews and audits are carried out to standardise and verify the quality of educational programmes. ISBB has also established a procedure for preparing and managing course syllabuses. This ensures that, while foundational content remains stable, necessary adjustments and updates are made to reflect advancements in disciplines and the evolving needs of students.

Routine teaching quality evaluations are carried out each semester to identify and address potential issues in teaching management. There are also criteria in place for monitoring and reassessing the performance of external teachers based on their ability to deliver educational outcomes in line with established requirements.

In terms of external quality assurance, each study programme should be reviewed and approved by the Sectoral National Commissions (SNC), which are established under the Ministry of Higher Education and Scientific Research, every four years. In May 2024, the ISBB obtained ISO 21001:2018 certification. As part of the ISBB, programmes under review

are included within the scope of its EOMS. ISBB recertification must be renewed every three years. The ISBB plans to continue certification to ISO 14001 and ISO 50001.

During the on-site discussions, the lecturers explained that satisfaction surveys are carried out at the end of the semester for each course. The results are then discussed with the head of the programme. They use the feedback from students in the next semester to improve their courses.

The interviewed students expressed a high degree of satisfaction with the various feedback methods and confirmed that they regularly complete the anonymous satisfaction surveys. They say that the questions in the end-of-semester surveys are clear and that they feel free to give comments. There is also a box for complaints. The students interviewed are confident that their feedback is duly considered and that appropriate action is taken.

In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:

ISBB's comprehensive quality management system is effective in identifying areas for improvement and enhancing programme quality. The experts are also aware of ISBB's commitment to conducting regular satisfaction surveys, with the findings contributing to the continuous improvement of the programme. However, the experts also agree that the results of the satisfaction surveys on teaching and each module, along with any measures derived from them, need to be communicated to the students. It is imperative that the feedback cycle is closed. Furthermore, the satisfaction survey questionnaires and workload survey (see above **1.5**) as well as the results derived from these surveys and analysis of these or report on the results (with English translation) must also be provided. In addition to the industrial survey, a tracer study or graduate survey needs to be introduced (see above **5**).

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

As stated by ISBB, all findings from teaching and module satisfaction surveys, along with corresponding improvement measures, will be systematically shared with students through the website as well as regular updates through student representative in Scientific Council. In fact, the website new update will include a new future that will permit to conduct surveys directly via the website and the results will be automatically published. Besides, complete survey instruments and analysed results are provided. The experts appreciate these explanations. However, it is unclear for them how the results will be shared and what is the process for implementing certain measures. As these measures are not implemented yet, the requirement is maintained in place.

E 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:

E1. Sample of students' survey questionnaire (teaching evaluation of the courses/lecturers) and data analysis of the results/survey results report (with English translation).
E2. Sample of Workload Survey questionnaire and results/analysis or report on results (with English translation).
E3. Updated module descriptions.
E4. Alignment Sheet LOs DMPT and EQAS LOs.

F Comment of the Higher Education Institution (08.08.2025)

The institution provided a detailed statement as well as the following additional documents:

D1. Sample of students' survey questionnaire (teaching evaluation of the courses/lecturers) and data analysis of the results/survey results report (with English translation).
D2. Sample of Workload Survey questionnaire and results/analysis or report on results (with English translation).
D2. Updated module descriptions.
D3. Alignment Sheet LOs DMPT and EQAS LOs.

The following quotes the comment of the institution:

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

P10. The objectives and learning outcomes need to be transparently anchored and published and thus be available to all stakeholders and interested third parties.
We confirm that the course objectives and learning outcomes are transparently published and available to all stakeholders on our official website at:
https://isbb.rnu.tn/eng/s174/pages/271/Food-Quality-Control-FQC
https://isbb.rnu.tn/eng/s174/pages/272/Food-Industry-and-Processing-FIP
https://isbb.rnu.tn/eng/s174/pages/273/MDPT-professional-Master%E2%80%99s-program

P10. In order to collect meaningful data about employment rates and fields in which graduates typically work, an alumni survey or tracer study needs to be introduced. Additionally, the data gathered should be used to develop the programmes and assess the extent to which courses offered have equipped students with the necessary skills for professional life, and identify areas where additional training may be beneficial (see also below **Criterion 5**).

We acknowledge the importance of alumni data and confirm that a student surveys was conducted (Please see Criterion 5, 'Alumni survey') with results analysed and incorporated into Criterion 5 of the updated SAR.

Criterion 1.3 Curriculum

P14. Furthermore, the experts identified discrepancies and ambiguous aspects concerning the nomenclature and content of certain individual modules. For instance, in DMPT, they do not see a link between the topics covered by the module "Standards, legislation, and food traceability". In addition, In addition, no references were found to artisan or drawer products. With regard to FIP, it appears that modules such as homogenization of milk are not included in the curriculum (Mechanical processes). The programme coordinators explain that these topics are included in the third and fourth-semester courses “Specialisation processes”. It also appears that there is an absence of specific quality management systems for food in the module quality control management section.

DMPT Programme: The "Standards, Legislation and Food Traceability" module is intentionally designed to address the systemic integration of food safety standards, regulatory frameworks and traceability mechanisms across the food supply chain. It examines how food standards inform legislative requirements and how traceability systems are implemented to ensure compliance from production to distribution.

In response to the observation regarding artisan and drawer products, we note that these are already addressed in the modules "Microbiology of fermented meat products" and "Fermented and artisanal dairy product technologies". However, we recognize the need to strengthen the explicit integration of regulatory frameworks with traditional food systems in the "Standards, legislation and traceability" module. In particular, legislation governing drawer and artisan products is currently underrepresented in the course content. To address this, we are revised the module to include dedicated coverage of legal instruments relevant to these product categories, which regulates appellations of origin and indications of provenance in Tunisia. Furthermore, the module will incorporate case-based applications where traceability is analyzed in both industrial and artisanal contexts.

FIP Programme:

-The ‘Science and technologies of milk and dairy products’ module (Semester 5) has been revised to explicitly include content on the mechanical processing of milk, including homogenization. Further details are provided in Section 1.3 of the Module Handbook.

-The Quality control management module (FIP and FQC, Semester 4) has been enhanced through the incorporation of a focused section on ISO 22000 within Chapter VI, providing students with a clearer understanding of food-specific quality management systems. This update is also documented in Section 1.3 of the Module Handbook.

P16. In certain instances, the nomenclature of the modules employed may not be precise and consequently obscures the true content of the module. Some new topics could also be integrated e.g. ISO IEC 17025. It is also recommended to integrate in the curriculum of both programmes under review contents related to sustainability and climate change. Therefore, they conclude that the description of the modules of all programmes under review

need to be revised and updated according to the current scientific and industry developments and ensure that the naming of the modules corresponds to the content (e.g. module about quality management system, food safety management systems).

- We acknowledge the expert recommendations regarding the revision of module titles to better reflect current course content and industry terminology. In full alignment with national accreditation protocols, these title updates will be implemented during the next re-accreditation cycle overseen by the Ministry of Higher Education and Scientific Research (MHESR). This phased approach is necessitated as all compulsory course titles are formally registered within the national examination database and mark script system, requiring formal MHESR approval for any modifications to maintain the validity of academic records and certification documents.

- A new elective module entitled 'ISO/IEC 17025:2017 – Laboratory management systems' module was introduced for FQC bachelor's degree students in Semester 4 (2026). (please see 1.3 'Module handbook).
- The ISBB will introduce also an elective module, "Sustainability and climate change," for bachelor's degree students in Semester 2 (2026). The module focuses on climate science fundamentals, circular economy principles and SDGs as applied to food systems, incorporating key environmental management frameworks including ISO 14001 standards (please see 1.3 'Sustainability and climate change module').
Both proposed modules will undergo a comprehensive review process to ensure alignment with current and emerging industry needs. The ISO/IEC 17025:2017 – Laboratory Management Systems module will be reviewed in collaboration with quality assurance professionals (TUNAC) to ensure its technical relevance and practical applicability.
The Sustainability and Climate Change module will be evaluated with input from our industrial partners, with particular focus on its relevance to emerging sustainability challenges in the agri-food sector.
As ASIIN experts, your feedback and validation of the learning outcomes and content of both modules would be highly appreciated.

P17. In addition, all mandatory components of the curriculum need to be included in the modules descriptions (including electives, internships and final thesis) and considered for the students' workload (see also below **1.5** and **4.1**).
All mandatory and elective modules were incorporated in the updated module handbooks. As for workload all of them are already credited (please see Criterion 1.5).
P17. Based on the students' feedback, the experts are also of the opinion that, for all programmes under review, the courses in English language should be increased. Furthermore, it is recommended to enhance the internationalization strategy by stronger support for international mobility of the students as well as more exchange and cooperation with foreign institutions and lecturers.
The ISBB will submit the following curriculum revisions to the Ministry of Higher Education and Scientific Research (MHESR) for approval during the upcoming reaccreditation cycle, incorporating recommendations from the ASIIN expert review.

-A new third English language course will be introduced in Semester 5 for both FQC and FIP programs, replacing the current "Food Legislation" course.
- The content from the existing "Food Legislation" course will be consolidated into an enhanced "Food Law and regulations" module (Semester 1), as recommended during the ASIIN onsite evaluation.

To enhance student international mobility, we are currently expanding our network of academic partnerships and actively seeking new bilateral agreements with foreign universities, particularly in Europe and the Mediterranean region. Regarding cooperation with foreign institutions and lecturers, ISBB has initiated collaborations through Erasmus+ and other mobility programs, and we are intensifying our efforts to host visiting professors and guest lecturers from partner institutions.

P17. The collaboration with the industry is viewed as a very positive aspect by the experts. However, it would be beneficial to integrate industry experts more closely into the courses, for example by inviting them to deliver workshops for the students.
As highlighted during the on-site visit, several specialized modules are taught by experts in their respective fields. Bassem Fadhlaoui, a recognized expert in food quality control and food safety management, delivers instruction in the 'Food safety management system' module. Similarly, Atef Hasni, an expert in food processing, teaches 'Industrial health, safety and environment' course , while Adnen Saidani, another distinguished food processing specialist, delivers instruction in the 'Food preservation techniques' and 'Agrifood techniques' modules.
In addition to these ongoing contributions, the ISBB organizes annual workshops and practical training sessions for students, covering critical areas such as Quality and Food Systems Management, QHSE (Quality, Health, Safety and Environment) and Meat and Milk Transformation.
The ISBB plans to further strengthen its integration of industry expertise by expanding opportunities for guest workshops and practical training.

P17. Additionally, an alumni survey should be introduced and these data also considered for the review and development of the programmes.
As mentioned previously we confirm that an alumni survey was conducted and the results were analysed and incorporated into Criterion 5 of the updated SAR.

Criterion 1.5 Workload and Credits

P21. However, the experts conclude that ISSB needs to implement a system to regularly monitor whether the credits awarded for each module of all programmes under review correspond to the actual student workload (e.g. an additional workload survey for each module or specific questions regarding workload in the teaching evaluations or surveys for each course). In addition, the programme coordinators mentioned the existence of a survey to assess the individual students' workload, but the students were unaware of this.

The experts would therefore appreciate clarification on this point, and a sample of the students' workload survey in question as well as analysis or report on the results derived from this survey.'
The last student workload survey was indeed conducted at the end of the 2024–2025 academic year (late June) using Google Forms. A sample of the questionnaire and the analysis of the results have been added to Criterion 5 of the updated SAR. The survey short link has been included in Folder 5 of the accreditation drive and we are also sharing the link by email as part of this response. The raw data (CSV or googole sheet format) includes timestamp information (Horodateur), with the majority of responses recorded on June 23–24 (before the on site visit). The results from this workload survey have already informed the update to Criterion 5.

P21. Furthermore, it is essential that all compulsory components of the study programmes are included in the workload calculation. A revision of the study plan and workload is imperative. The first internship in the Bachelor programme (FIP and FQC) must be awarded credits, as it is a compulsory component of the study programme.
We confirm that all compulsory elements of the Bachelor study programmes, including internships, are fully integrated into the overall workload and ECTS calculations. Specifically, the first internship in both the FIP and FQC programmes is a mandatory module. Although it is carried out during the summer period between the first and second academic years, its workload and corresponding credits are formally allocated in the study plan for Semester 4 of the second year.
We acknowledge that the initial version of the study plan may have caused confusion, as the internship module was not clearly containing this information. Accordingly, we have added following information: (Internship completed at the end of the first year, semester 4 FQC/FIP, semester 3 DMPT) (Internship completed at the end of the second year, semester 4 FQC/FIP)
The revised study plans have been uploaded to the accreditation folder 'Criterion 1.3'.

Criterion 1.6 Didactic and Teaching Methodology

P22. However, following the on-site visit and taking into consideration the feedback provided by both the lecturers and students, it is the opinion of the experts that the provision of more courses delivered in English should be considered and, for example, that incoming students be permitted to take at least one semester credit in English. The training of scientific English needs to be enhanced (for example, presentations in English, research proposal etc.).
In response to the experts' recommendations, we will submit a proposal to the ISBB Scientific Council to require that both the Bachelor's and Master's theses be written in English. We will also recommend that student projects, written reports and oral presentations across all study years be increasingly conducted in English. Furthermore, based on feedback from the student survey, a third English module focusing on scientific writing and presentation skills will be introduced in Semester 5.
In addition, some modules are already partially ('Milk Microbiology', 'Dairy Microbiology') or entirely ('Standards, Legislation and Traceability') delivered in English. Faculty members

will be further encouraged to adopt English as the language of instruction whenever appropriate to strengthen students' academic and professional communication skills.

Criterion 2 Exams: System, Concept and Organisation

Nevertheless, the experts are of the opinion that the final thesis should include an English summary.

P25. All final theses already include an English summary. However, in some of the samples reviewed by the experts, the abstract appeared on the penultimate page rather than in a more prominent position. We acknowledge this formatting issue and will take steps to standardise the placement of the English abstract at the beginning of the thesis and the ultimate page. As previously mentioned, we are also preparing a proposal to require that all Bachelor's and Master's theses be written entirely in English, which will further address this concern.

Criterion 3.1 Staff and Development

P28. However, the experts are of the opinion that ISBB should allocate more funds to enable lecturers to attend international scientific conferences.
We acknowledge the experts' recommendation and will increase funding to support lecturer participation in international scientific conferences via international project. We have submitted several Erasmus cooperation projects for 'Capacity building in the field of higher education'. One of them has just been accepted: ERASMUS-EDU-2025-CBHE-STRAND-3, Proposal number: 101236505 Proposal acronym: MED.HELA, EU Grant Amount : 990.891,36 EUR).

Criterion 3.3 Funds and equipment

P31. However, they recommend continuing to modernise laboratory equipment, particularly specialised equipment for research. Especially for process technology and the corresponding pilot plant facilities, reference is made to cooperation with industry.

In response to the recommendations, we will prioritize modernization of specialized research equipment, particularly in process technology and strengthen industry collaborations to enhance our pilot plant facilities through shared resources and expertise.
Besides, the following equipment was purchased and will be available next October: laminar flow hood incubator, orbital shaker, laser diffraction particle size analyzer with liquid dispersion accessory, gel documentation device, filtration ramp, microplate reader, universal oven lab bench and accessories, uv-visible spectrophotometer, cell counter, semi-preparative HPLC, laboratory refrigerator, biochemistry analyzer

Criterion 4.1 Module Descriptions

P32. The experts note that not all modules are included in the module handbook. They therefore conclude that the module handbook for each programme under review needs to be updated. All compulsory and elective courses, including all internships, electives and final theses, must be included in the module descriptions.
All compulsory and elective modules, including internships, have now been fully integrated into the revised module handbooks for each programme under review (please see, Criterion 1.3 'Module Handbooks).

P32. Furthermore, as mentioned above (see Section **1.3**), the module content must be updated and the names of the modules must correspond to their content.
A formal request was issued to all module leaders to verify that module titles accurately reflect the content and to ensure that all module descriptions are consistent with the intended learning outcomes and course content. As mentioned in 1.3, these title updates will be implemented during the next reaccreditation cycle overseen by the Ministry of Higher Education and Scientific Research (MHESR).
P32. If modules are delivered partly or fully in English, this information should also be included in the module handbook.
Modules that are delivered partly or fully in English are now clearly identified as such within each module description.
P32. Additionally, the module handbooks for all degree programmes under review should be published on the university's website, making them accessible to third parties.
The updated module handbooks are now published on the institute's website and made available to all stakeholders.

Criterion 4.2 Diploma and Diploma Supplement

P33. The diploma supplement must be provided in English and for both programmes under review. In addition, it needs to include data on the GPA distribution of graduates in the same cohort as set forth in the ECTS Users' Guide. This information should be included in the Diploma Supplement to assess the individual mark and ensure fair transfer and recognition of grades for mobile students

The Diploma Supplement in English, including data on the GPA distribution of graduates, has been prepared and is now available. Please refer to Criterion 1.2 for a sample of the English version of the Diploma Supplement.

Criterion 4.3 Relevant Rules

P34. The rights and obligations of both ISBB and the students are clearly defined and binding. Nevertheless, it is recommended that the institute and its programmes are presented more attractively to third parties and to enhance the English language version of the website.

We acknowledge the importance of improving ISBB's external visibility and communication. In response to the experts' recommendation, we have initiated a progressive update

of the English version of the ISBB website. Key regulatory documents, such as the ISBB internal rules (https://isbb.rnu.tn/eng/s174/pages/251/E-learning), examination regulations (https://isbb.rnu.tn/eng/s1137/pages/264/Examination-department) and institutional policy (https://isbb.rnu.tn/eng/s1137/pages/308/Quality-Policy), are already published online. Additionally, the HTML structure and visual design of the website are scheduled for a comprehensive update to enhance accessibility and user experience. This work is ongoing and expected to be completed in the coming months.

Criterion 5 Quality management: quality assessment and development

P37. However, the experts also agree that the results of the satisfaction surveys on teaching and each module, along with any measures derived from them, need to be communicated to the students. It is imperative that the feedback cycle is closed. Furthermore, the satisfaction survey questionnaires and workload survey (see above **1.5**) as well as the results derived from these surveys and analysis of these or report on the results (with English translation) must also be provided. In addition to the industrial survey, a tracer study or graduate survey needs to be introduced (see above **5**).

The institution fully acknowledges the importance of closing the feedback loop with students and stakeholders regarding satisfaction surveys and other quality assurance measures. We will implement the following actions to ensure comprehensive transparency: All findings from teaching and module satisfaction surveys, along with corresponding improvement measures, will be systematically shared with students through the website as well as regular updates through student representative in Scientific Council. In fact, the website new update will include a new future that will permit to conduct surveys directly via the website and the results will be automatically published. Besides, formal tracer study system will be developed to monitor graduate outcomes and featuring: annual surveys at 1, 3 and 5-year post-graduation intervals with special focus on competency gaps identified by employers.
Besides, complete survey instruments and analyzed results were included in the SAR as required (Crietrion 5).

The following sections were included in Criterion 5 of the SAR:

> **Module evaluation:** The 2024–2025 module evaluation analysis report presents a detailed review of student feedback to identify areas of strength and those requiring targeted improvement across the undergraduate curriculum. Utilizing standardized course evaluation surveys composed of 20 closed-ended questions rated on a 5-point scale (See, Criterion 5 ‘Module survey template), the analysis focused on questions with mean scores below 3.0, which were considered indicators of potential quality gaps. These questions were grouped under five key dimensions: teaching quality, course content and learning, student engagement, overall satisfaction, and evaluation and assessment.
>
> Findings confirm a generally strong foundation in teaching expertise and instructional relevance, with students reporting high levels of satisfaction regarding

instructor knowledge and the real-world applicability of course content (See Criterion 5, 'Module evaluation analysis report'). However, specific modules, particularly in the areas of mathematics, biostatistics and bioinformatics I, molecular biology, agrifood law, management and economics, scored below threshold in one or more dimensions. Root causes for these low scores include limited contextualization of content, lack of interactive or guided learning tools and insufficient or delayed feedback. Notably, concerns were raised about overly theoretical teaching methods in some modules.

In response, structured action plans have been proposed at both the course and institutional levels. These include reinforcing practical activities, introducing visual and interactive tools, embedding real-world applications into assignments, organizing targeted tutoring sessions, and implementing feedback delivery policies. Course teams have already begun aligning these actions with findings from annual module reports, which include learning outcome gap analyses. For example, molecular biology will incorporate visual simulations for complex processes like transcription and translation, while mathematics modules will emphasize problem-based scenarios and collaborative learning to build applied problem-solving skills.

Monitoring and continuous improvement will be ensured by the Quality Assurance and Pedagogical Committees through the use of feedback surveys, course reports and structured evaluation metrics such as item score evolution and compliance with feedback timelines.

Student workload: In 2023–2024, students were asked to report their estimated self-study hours per semester. The responses varied widely, which made it difficult to derive consistent or actionable conclusions. For the 2024–2025 academic year, the survey was refined to use a relative scale instead: students were asked whether their self-study time was less than, equal to or greater than the number of contact hours (See Criterion 5, 'sample of Student workload survey'). While this format reduced ambiguity and revealed broad trends, the data remained insufficiently granular for precise workload validation. To address this limitation, we are introducing an additional workload tracking method in 2025–2026: a representative sample (20%) of students per course will be asked to maintain a weekly workload logbook over the semester. These records will capture real-time estimates of self-study activities and be triangulated with course syllabi, instructor expectations and student performance data.

Despite the limitations of self-reporting, the 2024/2025 data revealed the following patterns:

-Semester 5 Elective Modules: 'Sensory Analysis' and 'Soft Drinks and Juice Technology' (FIP): Students reported self-study workloads exceeding 35 hours, compared to the 15 hours originally estimated in the study plan. With 35 contact hours, total workload surpassed 70 hours, suggesting an underestimation. Instructors confirmed that significant independent tasks (assignments, lab reports) contributed to the workload. As an action plan it was proposed to simplify and structure independent assignments and re-evaluate student workload in 2025/2026. If high loads persist, we will revise the ECTS allocation accordingly.

-Semester 2 Modules: 'General Economics' and 'Management' (FQC and FIP): Survey results indicated that actual self-study hours were significantly below those planned (less than 21 and 28 hours vs. 55 and 47 hours, respectively). Course teams reviewed these findings and confirmed that while learning outcomes were met, students engaged less than expected in independent learning. It was recommended to clarify expectations for self-study, embed structured individual activities and reassess workload alignment in the next evaluation cycle.

Alumni survey: The analysis of the employment outcomes and skills assessment of 2022-2023 graduates from ISBB's FQC and MDPT programs, based on response rates of 81.5% (22/27) and 91.6% (11/12), respectively, revealed critical insights into career pathways, skills alignment and market needs (See Criterion 5 'Alumni survey'). The employment landscape shows distinct patterns between programs. LCQA graduates predominantly pursue further education (68%), with smaller proportions entering employment (9%), entrepreneurship (18%) or job-seeking (5%). In contrast, TAPLC graduates demonstrate remarkable entrepreneurial spirit, with 64% establishing their own ventures, compared to 18% in traditional employment and 9% continuing studies. Notably, all employed graduates secured positions within twelve months of graduation.

Industry distribution highlights strong alignment with program specializations: 42% in agri-food, 28% in cosmetics/hygiene, 18% in dairy production and 12% in essential oil extraction. Graduate satisfaction levels remain consistently high, with employed respondents reporting positive assessments of both their current positions and the relevance of their ISBB education to workplace demands. The skills audit identifies particular strengths in communication, teamwork and academic knowledge. However, significant gaps emerge in technical English, Tunisian industry regulations and applied IT skills, indicating priority areas for curriculum enhancement. Employment barriers analysis reveals that graduates cite inadequate job search support as the primary challenge or difficulties to limited quality job openings. In response, graduates overwhelmingly request expanded internship opportunities, enhanced language training and professional workshops.

This analysis provides actionable insights for curriculum development, with particular emphasis on expanding professional language instruction, focusing on local regulatory knowledge and enhancing digital competencies.'

- **Module revision**: The ISBB has established also a procedure that outlines the preparation and management of course syllabi, ensuring that while the foundational content remains stable, necessary adjustments and updates are made to reflect advancements in disciplines and evolving student development needs. The detailed process for syllabus preparation and revision is presented in Figure 5.1 (See Criterion 5, 'Sample of Module review request'. For instance, in the Master's programme in Dairy and Meat Products Technology (DMPT), the module coordinator of "Economics and Management of a Food Company" submitted a formal request to update the module in response to student feedback. This initiative followed a supplementary training session on Lean Management organized by ISBB, during which students expressed interest in incorporating these concepts into the curriculum. The proposed changes aim to improve alignment

between academic content and current industry expectations in the agri-food sector. The updates include the addition of learning outcomes focused on entrepreneurship, continuous improvement using Lean principles, and critical evaluation of the social, economic, and environmental impacts of the food industry. The course content will now cover key Lean Management tools such as the PDCA cycle, Kaizen, and the Kanban system.

- **Module Report:** As part of ISBB's quality assurance system, each instructor completes an annual module report based on a structured self-evaluation format (Please see Criterion 5, ‚Module report'). This report enables continuous monitoring and improvement of teaching and learning. The report includes an analysis of student performance (grade distribution), assessment of course learning outcomes (CLOs) and recommendations for addressing any identified gaps (please see Criterion 5, 'Sample of module annual report'."

G Summary: Expert recommendations (30.08.2025)

Taking into account the additional information and the comments given by ISBB, the experts 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
Ba Food Science and Technology	With requirements for one year	30.09.2031	EQAS-Food	30.09.2031
Ma Dairy and Meat Products Technology	With requirements for one year	30.09.2031	EQAS-Food	30.09.2031

Requirements

For all degree programmes

A 1. (ASIIN 1.3, 4.1) The module handbook needs to be revised and updated, particularly with respect to the alignment between the module names and the content.

A 2. (ASIIN 5) The results of the course satisfaction surveys need to be communicated to the students in order to close the feedback loop.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to stronger integrate people from the industry in the courses e.g. for giving workshops, and for curriculum development.

E 2. (ASIIN 1.3, 3.1) It is recommended to enhance the internationalization strategy by increasing the modules delivered in English language, stronger support for international mobility of the students and lecturers, as well as more exchange and cooperation with foreign institutions and lecturers.

E 3. (ASIIN 3.1) It is recommended to allocate more funds for lecturers for attending scientific international conferences.

E 4. (ASIIN 4.3) It is recommended to improve the presentation of the institute and programmes on the website.

E 5. (ASIIN 3.3) It is recommended to continue modernizing equipment in the labs, especially in the research labs.

H Comment of the Technical Committee 08 - [Agriculture, Forestry and Food Sciences] (11.09.2025)

Assessment and analysis for the award of the ASIIN seal:

The TC discusses the procedure and follows the experts' assessment without changes.

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 and Food Sciences.

The Technical Committee 08 – Agriculture, Forestry and Food Sciences recommends the award of the seals as follows:

Degree Programme	**ASIIN Seal**	**Maximum duration of accreditation**	**Subject-specific label**	**Maximum duration of accreditation**
Ba Food Science and Technology	With requirements for one year	30.09.2031	EQAS-Food	30.09.2031
Ma Dairy and Meat Products Technology	With requirements for one year	30.09.2031	EQAS-Food	30.09.2031

I Decision of the Accreditation Commission (26.09.2025)

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

The Accreditation Commission agrees with the experts' assessment and proposals of the Technical Committee 13 – Physics. In addition, it amends the wording in E1.

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 and Food Sciences.

The Accreditation Commission decides to award the following seals:

Degree Programme	**ASIIN Seal**	**Maximum duration of accreditation**	**Subject-specific label**	**Maximum duration of accreditation**
Ba Food Science and Technology	With requirements for one year	30.09.2031	EQAS-Food	30.09.2031
Ma Dairy and Meat Products Technology	With requirements for one year	30.09.2031	EQAS-Food	30.09.2031

Requirements

For all degree programmes

A 1. (ASIIN 1.3, 4.1) The module handbook needs to be revised and updated, particularly with respect to the alignment between the module names and the content.

A 2. (ASIIN 5) The results of the course satisfaction surveys need to be communicated to the students in order to close the feedback loop.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to more strongly integrate people from the industry in the courses e.g. for giving workshops, and for curriculum development.

E 2. (ASIIN 1.3, 3.1) It is recommended to enhance the internationalization strategy by increasing the modules delivered in English language, stronger support for international mobility of the students and lecturers, as well as more exchange and cooperation with foreign institutions and lecturers.

E 3. (ASIIN 3.1) It is recommended to allocate more funds for lecturers for attending scientific international conferences.

E 4. (ASIIN 4.3) It is recommended to improve the presentation of the institute and programmes on the website.

E 5. (ASIIN 3.3) It is recommended to continue modernizing equipment in the labs, especially in the research labs.

Appendix: Programme Learning Outcomes and Curricula

According to the Diploma Supplement, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the **Bachelor degree programme Food Science and Technology (Food Quality Control / Food Industry and Processing**):

BS	**Demonstrate and apply knowledge of the basic sciences to food science and technology**
BS.1	Understand and apply knowledge of basic sciences to food science and technology
FCA	**Demonstrate and apply knowledge of the core competencies in Food Chemistry and analysis**
FCA.1	Explain the physical, chemical and biochemical properties of raw materials and foods.
FCA.2	Discuss the major chemical reactions that limit the shelf life of foods.
FCA.3	Apply food chemistry principles to control reactions in foods.
FCA.4	Use the laboratory techniques common to basic and applied food chemistry.
FCA.5	Describe the effects of food process operations on physico-chemical properties of foods.
FCA.6	Describe the main constituents of foods and their role in nutrition and health.
FCA.7	Explain the principles behind analytical techniques associated with food.
FCA.8	Evaluate the appropriate analytical technique when presented with a practical problem.
FMS	**Demonstrate and apply knowledge of the core competencies of Food Microbiology and Safety**
FMS.1	Identify pathogenic, spoilage and industrially beneficial microorganisms, as well as the conditions for their growth, in foodstuffs and in industrial and biotechnological processes.
FMS.2	Describe the conditions under which relevant pathogens are destroyed or controlled in foods.
FMS.3	Apply laboratory techniques to identify microorganisms in foods.
FMS.4	Select relevant laboratory techniques to identify microorganisms in foods.
FMS.5	Discuss the principles and limitations of food preservation.
FMS.6	Identify food hazards, their nature, their sources and suitable methods for controlling them throughout the food supply chain.
FMS.7	Demonstrate a practical understanding of health and safety in the laboratory.
FPE	**Demonstrate and apply knowledge of the core competencies in Food Processing and Engineering**
FEP.1	Define principles of food engineering (mass, heat and momentum transfer).
FEP.2	Formulate mass and energy balances for a general food process.

FEP.3	Explain the unit operations required to preserve or produce a given food product.
FEP.4	Explain the source and variability of raw food materials and their impact on food processing operations.
FEP.5	Know the principles and current practices of processing techniques and the effects of processing parameters on product quality.
FEP.6	List properties and uses of various packaging materials.
SS	**Demonstrate and apply knowledge of the core competencies of Food Sensory Science**
SS.2	Apply experimental designs and statistical methods to sensory studies.
SS.3	Select sensory methodologies to solve specific problems in food.
QML	**Demonstrate and apply knowledge of the core competencies in quality management and food laws and regulations**
QML.1	Demonstrate a comprehensive understanding of quality management principles and their application in the food industry.
QML.2	Describe the key organizations responsible for overseeing quality management in the food industry
QML.3	Apply the principles of metrology to ensure the accuracy, precision and traceability of measurements
QML.4	Describe the principles of food legislation, identify and analyze issues associated with food laws and regulations.
DSA	**Apply statistical principles to food science applications**
DSA.1	Analyze problems in a quantitative way, using basic mathematical and statistical principles
DSA.2	Use appropriate data collection and analysis technologies
CTS	**Demonstrate critical thinking skills to solve technical and applied problems in Food Science and technology**
CTS.1	Locate, evaluate and utilize information
CTS.1	Apply critical thinking skills to solve problems
CTS.1	Apply principles of discipline in practical, real-world situations and problems.
CTS.1	Select appropriate analytical techniques when presented with a practical problem
CMS	**Communicate effectively with the scientific community and the society as a whole**
CMS.1	Produce comprehensive scientific and technical reports.
CMS.2	Utilize technological and creative media to create formal and informal presentations

CMS.3	Assemble food science information for various audiences
PES	**Demonstrate effective professional and entrepreneurship skills.**
PES.1	Demonstrate the ability to work independently and cooperatively in cross-disciplinary teams.
PES.2	Demonstrate entrepreneurial skills and creativity to identify opportunities within the food industry
PES.3	Discuss examples of ethical issues in food science and technology
Specialization-Specific competences	
FQC	
FCA.9.	Demonstrate practical proficiency in a food analysis laboratory.
SS.1	Discuss the physiological and psychological basis for sensory evaluation.
QML.5	Apply traceability techniques to ensure the quality and safety of food products.
QML.6	Apply the principles of food science to control and assure the quality of food products.
QML.7	Be familiar with the processes of normalization, standardization and certification, ensuring compliance with regulations related to food quality control.
QML.8	Identify, investigate and address sources of non-compliance or product defects.
FIP	
FEP.7	Apply principles of cleaning and sanitation and waste management in food processing facilities.
FEP.8	Contribute to the development of new food products or packaging materials.
FEP.9	operate, maintain and troubleshooting various machinery used in processing
FEP.10	Possess advanced knowledge of processing technologies and methods of diverse food matrices.

The following **curriculum** is presented for the **Bachelor degree programme Food Science and Technology, Food Quality Control option:**

FQC : SEMESTER 1/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
	UEF111	Applied mathematics	21	14		0	40	3	6		X
	UEF112	Physics	21	10.5	10.5	0	33	3			x
UEF120	UEF121	General chemistry	21	7	10.5	0	37	3	6		X
	UEF122	Organic chemistry	21	7	10.5	0	37	3			X
UEF130	UEF131	cell biology	21	7	10.5	0	37	3	6		X
	UEF132	Genetics	21	10.5	7	0	37	3			X
UEF140	UEF141	Plant biology	21		17.5	0	37	3	6		X
	UEF142	Animal biology	21		17.5	0	37	3			X
UET110	UET111	C2i		21		0	30	2	6	X	
	UET112	English I		28		0	22	2		X	
	UET113	Agri-food law		14		0	37	2		x	
Subtotal			168	119	84	0	384	30	30		
Total semester workload			755								

FQC : SEMESTER 2/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
UEF210	UEF211	Structural biochemistry	21	7	14	0	33	3	6		X
	UEF212	Physicochemical analysis techniques	14	7	14	0	40	3			x
UEF220	UEF221	Molecular biology	21	10.5	7	0	37	3	6		X
	UEF222	Microbiology	21		17.5	0	37	3			X
UEF230	UEF231	Plant physiology	21		17.5	0	37	3	6		X
	UEF232	Animal physiology	21		17.5	0	37	3			X
UEO210	UEO241	Elective Module 1	21	7		0	47	3	6	x	
	UEO242	Elective Module 2	21	7	14	0	33	3		X	
UET210	UET211	General economics	21			0	55	3	6	X	
	UET212	Management	21	7		0	47	3		X	
Subtotal			203	45.5	101.5	0	403	30	30		
Total semester workload			753								
ELECTIVE MODULES			Biotechnology basics/Chemical contaminants/ *Biological contaminants*								

FQC: SEMESTER 3/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
UEF310	UEF 311	Food biochemistry I	21		14	0	65	4	7		X
	UEF312	Enzymology	21	7	14	0	33	3			x
UEF320	UEF321	Food microbiology	21		21	0	60	4	7		X
	UEF322	Process engineering	21	7	7	0	40	3			X
UEF330	UEF331	Applied nutrition	14	7	7	0	25	2	6		X
	UEF332	Toxicology	14		7	0	30	2			X
	UEF333	Food science	14		14	0	25	2			x
UEO310	UEO311	Elective Module 1	21	7		0	25	2	4	X	
	UEO312	Elective Module 2	21	7		0	25	2		X	
UET310	UET311	ICT multimedia		28		0	50	3	6	X	
	UET312	English II		28		0	50	3		x	
Subtotal			**168**	**91**	**84**	**0**	**428**	**30**	**30**		
Total semester workload			**771**								
ELECTIVE MODULES			*Physical properties of foods/Biological and functional foods/Food fraud and Bio-waste valorization*								

FQC: SEMESTER 4/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
UEF410	UEF 411	Bioprocess engineering	21	7		0	47	3	6		X
	UEF412	Conservation techniques	21		10.5	0	45	3			x
UEF420	UEF421	Agrifood techniques	21		17.5	0	37	3	6		X
	UEF422	Unit operations	21	10.5	7	0	37	3			X
UEF430	UEF431	Quality control management	21	14		0	40	3	6		X
	UEF432	Metrology	21	7	14	0	33	3			X
UEO410	UEO411	Elective Module 1	21	7		0	25	2	4	X	
	UEO412	Elective Module 2	21	7	10.5	0	15	2		X	
UET410	UET411	Organizational Culture				21	30	2	4	X	
	UET412	Bioethics and biosecurity I				28	25	2		X	
	Internship in a professional setting						120	4	4		
Subtotal			**168**	**52.5**	**59.5**	**49**	**454**	**30**	**30**		
Total semester workload			**783**								
ELECTIVE MODULES			*Sampling Techniques, Design of experiments, Food formulation and innovation, Food safety management system and Halal management.*								

FQC: SEMESTER 5/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
UEF510	UEF 511	Science and technology of animal products	21		17.5	0	40	3	6		x
	UEF512	Science and technology of plant products	21		17.5	0	40	3			x
UEF520	UEF521	Food traceability	14		7	0	30	2	6		x
	UEF522	Sensory Analysis and Rheology	14		7	0	30	2			x
	UEF523	Hygiene in food industry	14	7		0	30	2			x
UEF530	UEF531	Conservation, conditioning and packaging techniques	21	7	7	0	40	3	6		x
	UEF532	Standardisation, normalisation, certification	21			0	55	3			x
UEO110	UEO511	Elective Module 1	21	7	10.5	0	12	2	4	X	
	UEO512	Elective Module 2	21	7	10.5	0	12	2		X	
UET510	UET511	Food legislation	14			0	14	1	4	X	
	UET512	Entrepreneurship		21		0	30	2		X	
	UET513	Biostatistics I and bioinformatics I		21		0	5	1		X	
		Internship in the food industry				0	120	4	4		
		Subtotal	**182**	**70**	**77**	**0**	**458**	**30**	**30**		
		Total semester workload	**787**								
		ELECTIVE MODULES			*Biochemical control, Microbiological control, Quality control of animal-based foods, and Quality control of plant-based foods*						

QC: SEMESTER 6/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit
	internship graduation project		0	0	0	0	750	30	30
	Total semester workload		**750**						

The following **curriculum** is presented for the **Bachelor degree programme Food Science and Technology, Food Industry and Processing option:**

FIP: SEMESTER 1/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
	UEF111	Applied mathematics	21	14		0	40	3	6		X
	UEF112	Physics	21	10.5	10.5	0	33	3			x
UEF120	UEF121	General chemistry	21	7	10.5	0	37	3	6		X
	UEF122	Organic chemistry	21	7	10.5	0	37	3			X
UEF130	UEF131	cell biology	21	7	10.5	0	37	3	6		X
	UEF132	Genetics	21	10.5	7	0	37	3			X
UEF140	UEF141	Plant biology	21		17.5	0	37	3	6		X
	UEF142	Animal biology	21		17.5	0	37	3			X
UET110	UET111	C2i		21		0	30	2	6	X	
	UET112	English I		28		0	22	2		X	
	UET113	Agri-food law		14		0	37	2		x	
	Subtotal		**168**	**119**	**84**	**0**	**384**	**30**	**30**		
	Total semester workload		**755**								

FIP: SEMESTER 2/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
UEF210	UEF211	Structural biochemistry	21	7	14	0	33	3	6		X
	UEF212	Physicochemical analysis techniques	14	7	14	0	40	3			x
UEF220	UEF221	Molecular biology	21	10.5	7	0	37	3	6		X
	UEF222	Microbiology	21		17.5	0	37	3			X
UEF230	UEF231	Plant physiology	21		17.5	0	37	3	6		X
	UEF232	Animal physiology	21		17.5	0	37	3			X
UEO210	UEO241	Elective Module 1	21	7		0	47	3	6	x	
	UEO242	Elective Module 2	21	7	14	0	33	3		X	
UET210	UET211	General economics	21			0	55	3	6	X	
	UET212	Management	21	7		0	47	3		X	
Subtotal			**203**	**45.5**	**101.5**	**0**	**403**	**30**	**30**		
Total semester workload			**753**								
ELECTIVE MODULES			Biotechnology basics/Chemical contaminants, *Biological contaminants*								

FIP: SEMESTER 3/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
UEF310	UEF 311	Food biochemistry I	21		14	0	65	4	7		X
	UEF312	Enzymology	21	7	14	0	33	3			x
UEF320	UEF321	Food microbiology	21		21	0	60	4	7		X
	UEF322	Process engineering	21	7	7	0	40	3			X
UEF330	UEF331	Applied nutrition	14	7	7	0	25	2	6		X
	UEF332	Toxicology	14		7	0	30	2			X
	UEF333	Food science	14		14	0	25	2			x
UEO310	UEO311	Elective Module 1	21	7		0	25	2	4	X	
	UEO312	Elective Module 2	21	7		0	25	2		X	
UET310	UET311	ICT multimedia		28		0	50	3	6	X	
	UET312	English II		28		0	50	3		x	
Subtotal			**168**	**91**	**84**	**0**	**428**	**30**	**30**		
Total semester workload			**771**								
ELECTIVE MODULES			*Biological functional food/Biowaste valorization, Chilling and refrigeration,* and *Chilling and freezing.*								

0 **Appendix: Programme Learning Outcomes and Curricula**

FIP: SEMESTER 4/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
UEF410	UEF 411	Bioprocess engineering	21	7		0	47	3	6		X
	UEF412	Conservation techniques	21		10.5	0	45	3			x
UEF420	UEF421	Agrifood techniques	21		17.5	0	37	3	6		X
	UEF422	Unit operations	21	10.5	7	0	37	3			X
UEF430	UEF431	Quality control management	21	14		0	40	3	6		X
	UEF432	Metrology	21	7	14	0	33	3			X
UEO410	UEO411	Elective Module 1	21	7		0	25	2	4	X	
	UEO412	Elective Module 2	21	7	10.5	0	15	2		X	
UET410	UET411	Organizational Culture				21	30	2	4	X	
	UET412	Bioethics and biosecurity I				28	25	2		X	
	Internship in a professional setting						120	4	4		
Subtotal			**168**	**52.5**	**59.5**	**49**	**454**	**30**	**30**		
Total semester workload			783								
ELECTIVE MODULES			*Sampling techniques/ design of experiments/Food formulation and innovation process/ Food traceability/ Environmental Management*								

FIP: SEMESTER 5/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
UEF510	UEF 511	Science and Technology of Milk and Derivative Products	21		17.5	0	37	3	6		X
	UEF512	Science and technology of meat, fish and eggs	21		17.5	0	37	3			X
UEF520	UEF521	Technology of fruits, legumes and cereals	14		10.5	0	27	2	6		X
	UEF522	Fats technology	14		10.5	0	27	2			X
	UEF523	Chocolate and sugar technology	14		7	0	30	2			X
UEF530	UEF531	Quality-Hygiene	21			0	55	3	6		X
	UEF532	Conditioning and packaging	21	7	7	0	40	3			X
UEO110	UEO511	Elective Module 1	21		14	0	15	2	4	X	
	UEO512	Elective Module 2	21		14	0	15	2		X	
UET510	UET511	Food legislation	14			0	12	1	4	X	
	UET512	Entrepreneurship		21		0	30	2		X	
	UET513	Biostatistics I and bioinformatics I		21		0	7	1		X	
		Internship in the food industry				0	120	4	4		
Subtotal			**182**	**70**	**77**	**0**	**452**	**30**	**30**		
Total semester workload			781								
ELECTIVE MODULES			Food additives/Sensory analysis/Juice and soft drinks technology/Wine brewery and vinegar production								

FQC/FIP: SEMESTER 6/6

UNIT CODE	Module Code	Module	Hours					ECTS Credits	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit
		internship graduation project	0	0	0	0	750	30	30
Total semester workload			**750**						

According to the Diploma Supplement, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the **Professional Master Dairy and Meat Products Technology**:

	PLO
PLO1	Demonstrate advanced knowledge and critical understanding of microbiological, chemical and biochemical principles relevant to dairy and meat science, including spoilage organisms, pathogenic bacteria, toxins and preservation methods.
PLO2	Possess comprehensive knowledge of legal and regulatory requirements, quality standards and good practices applicable to dairy and meat industries, ensuring compliance and consumer safety.
PLO3	Critically analyze the properties of food matrices and apply scientific and engineering principles to assess the impact of production processes on food quality, composition and nutritional value.
PLO4	Formulate and solve complex problems in dairy and meat processing by applying scientific and engineering models, assessing ecological, economic, social and health impacts on product development.
PLO5	Design and conduct experiments using advanced laboratory techniques to evaluate food safety, quality and shelf-life, applying mathematical and statistical models to interpret results.
PLO6	Critically evaluate the influence of intrinsic and extrinsic factors on microbial growth, preservation efficacy and food quality in dairy and meat products
PLO7	Use advanced methods of scientific investigation to research microbiological, chemical and physical properties of dairy and meat products, ensuring rigorous data collection, analysis and interpretation.
PLO8	Access, evaluate and integrate information from diverse scientific sources, critically assessing emerging technologies, methods and materials for their applicability and impact on dairy and meat science.
PLO9	Conduct research autonomously, critically interpreting data to draw well-supported conclusions and advancing the scientific knowledge base in food science and technology.
PLO10	Develop innovative solutions to complex and novel problems in dairy and meat science, balancing conflicting goals and integrating interdisciplinary knowledge.
PLO11	Analyze and optimize food processing systems to enhance the quality, safety and sustainability of dairy and meat products.

PLO12	Utilize advanced analytical and computational tools to design and assess processing systems and packaging solutions, ensuring product integrity, shelf-life and compliance with regulatory standards.
PLO13	Implement principles of hygiene, cleaning and sanitation within dairy and meat processing environments, understanding their role in quality assurance, waste management and regulatory compliance.
PLO14	Evaluate the social, economic and environmental implications of dairy and meat processing practices and proposing sustainable alternatives
PLO15	Demonstrate ethical responsibility, integrity and adherence to professional standards in food science, maintaining respect for regulatory frameworks in dairy and meat industries.
PLO16	Communicate effectively with multidisciplinary teams in national and international context, conveying complex scientific information, technical findings and safety considerations in a clear, concise and professional manner.
PLO17	Engage in continuous learning and self-improvement, critically reflecting on professional practice and staying abreast of technological advancements, emerging trends and regulatory updates in food science and technology.

The following **curriculum** is presented for the **Professional Master Dairy and Meat Products Technology**:

DMPT: SEMESTER 1/4

UNIT CODE	Module Code	Module	Hours				ECTS Credits		Assessment regime		
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
UEF110	UEF111	Physiology of lactation	21	3.5	10.5		40	3	6		X
	UEF112	Dairy breeds health and management	21	3.5	10.5		45	3			X
UEF120	UEF121	Milk microbiology	21	3.5	10.5		45	3	6		X
	UEF122	Microbiology of meat products	21	3.5	10.5		45	3			X
UEF130	UEF131	Industrial health, safety and environment HSE	21	3.5	10.5		40	3	6		X
	UEF132	Standards, legislation and food traceability II	21	7	7		40	3			X
UEO110	UEO111	Elective Module 1	21	7			50	3	6	X	
	UEO112	Elective Module 2	21	3.5	10.5		40	3		X	
UET110	UET111	Scientific English				21	30	2	6	X	
	UET112	Economics and Management of a Food Company				21	30	2		X	
	UET113	Bioinformatics II				28	25	2		x	
Subtotal			**168**	**35**	**70**	**70**	**430**	**30**	**430**		
Total semester workload			**773**								
ELECTIVE MODULES			Livestock production/Farm management/Embryonic development/Diagnosis of the agricultural operation and the livestock system								

DMPT: SEMESTER 2/4

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
UEF210	UEF211	Biotechnology and genetic improvement of livestock	21	3.5	10.5		40	3	6		X
	UEF212	Livestock Reproductive Technologies	21	3.5	10.5		40	3			X
UEF220	UEF221	Physico-chemical analysis of milk and meat products	21	3.5	10.5		40	3	6		X
	UEF222	Food biochemistry II	21	3.5	10.5		45	3			X
UEF230	UEF231	Food (Dairy and meat products) formulation and innovation process	21	3.5	10.5		45	3	6		X
	UEF232	Dairy and Meat Product Technology	21	3.5	10.5		45	3			X
UEO210	UEO211	Elective Module 1	21	3.5	10.5		40	3	6	X	
	UEO212	Elective Module 2	21	3.5	10.5		40	3		X	
UET210	UET211	Business English				21	30	2	6	X	
	UET212	Professional project				28	22	2		X	
	UET213	Bioethics and biosecurity II				21	30	2		X	
		Subtotal	**168**	**28**	**84**	**70**	**417**	**30**	**30**		
		Total semester workload	**767**								
		ELECTIVE MODULES	Bioreactors/Rheology of Food Systems/Heterologous expression of proteins of interest/Hormones and their biotechnological applications/Basic and applied parasitology								

DMPT: SEMESTER 3/4

UNIT CODE	Module Code	Module	Hours					ECTS Credits		Assessment regime	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit	Continuous assessment	Mixed assessment
UEF310	UEF311	Cheese- and butter-making technologies	21	3.5	10.5		45	3	6		X
	UEF312	Fermented and artisanal dairy product technologies	21	3.5	10.5		40	3			X
UEF320	UEF321	Properties of meat products	21	3.5	10.5		40	3	6		X
	UEF322	Processing of meat products	21	3.5	10.5		45	3			X
UEF330	UEF331	Nutritional value of milk and meat products	21	3.5	10.5		40	3	6		X
	UEF332	Safety and toxicology of dairy and meat products	21	3.5	10.5		40	3			X
UEO310	UEO311	Elective Module 1	21	3.5	10.5		17	2	6	X	
	UEO312	Elective Module 2	21	3.5	10.5		17	2		X	
UET310	UET311	Food marketing				21	7	1	6	X	
	UET312	Innovation and entrepreneurship II				21	30	2		X	
	UET313	Biostatistics II				28	2	1		X	
		Internship in a professional setting					120	4	4		
		Subtotal	**168**	**28**	**84**	**70**	**443**	30	30		
		Total semester workload	**793**								
		ELECTIVE MODULES	Packaging and conditioning of dairy and meat products/Valorisation of by-products from milk and meat processing/Functional and fortified foods/Health and diet nutrition								

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UNIT CODE	Module Code	Module	Hours					ECTS Credits	
			Lecture	Workshop	Practical work	Integrated course	Self-Study	Module	Unit
		internship graduation project	0	0	0	0	900	30	30
		Total semester workload	**900**						