ASIIN Seal

Accreditation Report

Bachelor's Degree Programme
Food and Agricultural Product Technology

Master's Degree Programmes
Food Science and Technology
Biomedical Engineering

Doctoral Programmes
Biotechnology
Biological Sciences
Environmental Science

Provided by
Universitas Gadjah Mada – Indonesia

Version: 27 March 2026

Table of Content

A Accreditation Status 3
Result Overview 3

B About the Accreditation Process 5

B Characteristics of the Degree Programmes 7

C Expert Report for the ASIIN Seal 12
1. The Degree Program: Concept, Content & Implementation 12
2. Exams: System, Concept and Organisation 50
3. Resources 54
4. Transparency and Documentation 66
5. Quality management: quality assessment and development 70

D Additional Criteria for Structured Doctoral Programmes 76

E Additional Documents 83

F Comment of the Higher Education Institution (26.01.2026) 84

G Summary: Expert recommendations (16.02.2026) 123

H Comment of the Technical Committees (16.03.2026) 125
Technical Committee 05 – Material Sciences, Physical Technologies (12.03.2026) . 125
Technical Committee 08 – Agriculture, Nutritional Sciences and Landscape Architecture (03.03.2026) 125
Technical Committee 10 – Life Sciences (06.03.2026) 126
Technical Committee 11 – Geosciences (16.03.2026) 127

I Decision of the Accreditation Commission (27.03.2026) 128

Appendix: Program Learning Outcomes and Curricula 131

A Accreditation Status

Result Overview

The most recent decision for the ASIIN Seal was made by the ASIIN Accreditation Commission on 27.03.2026.

Degree Programmes	ASIIN Seal	Validity
Ba Food and Agricultural Product Technology	Accredited with requirements	27.03.2026 - 22.07.2027
Ma Food Science and Technology	Accredited with requirements	27.03.2026 - 22.07.2027
Ma Biomedical Engineering	Accredited with requirements	27.03.2026 - 22.07.2027
PhD Biotechnology	Accredited with requirements	27.03.2026 - 22.07.2027
PhD Biological Sciences	Accredited with requirements	27.03.2026 - 22.07.2027
PhD Environmental Science	Accredited with requirements	27.03.2026 - 22.07.2027

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Verify the students' total workload for each module and award the ECTS points accordingly. It needs to be transparent how many hours of students' workload are required for one ECTS point.

For the Master’s programmes

A 2. (ASIIN 1.4) The admission regulation needs to make transparent what competences are required and under what circumstances applicants have to join the matriculation programme before starting with a Master's programme.

For the Doctor Environmental Science

A 3. (ASIIN 4.3) The English homepage of the degree programme needs to include the essential information about the respective programme such as profile, intended learning outcomes, study plan, and a link to the module descriptions of all modules.

For the Master Biomedical Engineering

A 4. (ASIIN 4.3) The English homepage of the degree programme needs to include links to the module descriptions of all module.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to increase the students' academic mobility (incoming and outgoing) and to encourage Indonesian students to spend some time abroad during their studies.

E 2. (ASIIN 1.3) It is recommended to teach part of the subject-specific modules in English.

E 3. (ASIIN 1.3, 4.1) It is recommended to make transparent how AI is applied in the different modules.

E 4. ASIIN (3.3) It is recommended to improve the booking system for the advanced instruments in the centralised research labs to avoid bottlenecks and a prioritisation for important and urgent research projects should be possible.

E 5. (ASIIN 4.2) It is recommended to include the ECTS points of each module in the study plans.

For the Bachelor's and the Master's programmes

E 6. (ASIIN 1.3) It is recommended to improve Bachelor's and Master's students skills in problem solving e.g. through project based case studies.

E 7. (ASIIN 1.3) It is recommended to increase the scope and scientific demand of the laboratory modules.

For the Bachelor's programme

E 8. (ASIIN 1.3) It is recommended to offer a module in bioinformatics, which should be taught on an applied level (e.g. based on python).

B About the Accreditation Process

Name of the degree program (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committee (TC)[2]
Sarjana Teknologi Pangan dan Hasil Pertanian	Bachelor Food and Agricultural Product Technology	ASIIN	BAN-PT [3] until 2029-03-27	08
Magister Ilmu dan Teknologi Pangan	Master Food Science and Technology	ASIIN	BAN-PT until 2026-05-21	08
Magister Teknik Biomedis	Master Biomedical Engineering	ASIIN	BAN-PT until 2027-08-30	05, 10
Doktor Bioteknologi	PhD Biotechnology	ASIIN	BAN-PT until 2026-12-15	10
Doktor Biologi	PhD Biological Sciences	ASIIN	BAN-PT until 2030-06-02	10
Doktor Ilmu Lingkungan	PhD Environmental Sciences	ASIIN	BAN-PT until 2030-06-29	10, 11
Date of the contract: 17.12.2024 **Submission of the final version of the self-assessment report:** 25.09.2025 **Date of the on-site visit:** 11.– 13.11.2025 **At:** Universitas Gadjah Mada **Location:** Yogyakarta, Indonesia.				
Expert panel:				

[1] ASIIN Seal for degree programs
[2] TC: Technical Committee for the following subject areas: TC 05 - Materials Science, Physical Technologies, TC 08 - Agriculture, Forestry and Food Sciences, TC 10 – Life Sciences, TC 11 - Geosciences
[3] Badan Akreditasi Nasional Perguruan Tinggi (BAN-PT)

Prof. Dr.-Ing. Theodor Doll, Medical University Hannover Prof. Dr. Joachim Fensterle, University of Applied Sciences RheinWaal Prof. Dr. Thomas John, University of Applied Sciences Neubrandenburg Prof. Dr. Matthias Kleinke, University of Applied Sciences RheinWaal Assoc. Prof. Dr. Erlia Narulita, Universitas Jember Sabine Huck, Bundesministerium für Umwelt, Klimaschutz, Naturschutz und nukleare Sicherheit, Berlin Dina Riska M.Sc., Universitas Mulawarman, PhD Student	
Representative of the ASIIN headquarter: Rainer Arnold	
Responsible decision-making committee: Accreditation Commission for Degree Programs	
Criteria used: European Standards and Guidelines as of 15.05.2015 ASIIN General Criteria as of 28.03.2023 Subject-Specific-Criteria of the Technical Committee 05 – Materials Science, Physical Technologies as of 25.09.2025 Subject-Specific-Criteria of the Technical Committee 08 – Agriculture, Forestry and Food Sciences as of 27.03.2015 Subject-Specific-Criteria of the Technical Committee 10 – Life Sciences as of 28.06.2019 Subject-Specific-Criteria of the Technical Committee 11 – Geosciences as of 09.12.2011	

B Characteristics of the Degree Programmes

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[4]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Bachelor Food and Agricultural Product Technology	Sarjana Teknologi Pertanian (S.T.P.) / Bachelor in Agricultural technology	-	6	Full time	no	8 Semester	144 CSU / 216 ECTS	Once a year (August)
Master Food Science and Technology	Magister Sains / Master of Science	-	7	Full time	no	4 Semester	40 CSU / 119.4 ECTS 36 CSU / 112.5 ECTS	Twice a year (August, February)
Master Biomedical Engineering	Magister Sains / Master of Science	-	7	Full time	no	4 Semester	44 CSU / 114 ECTS 44 CSU / 114.6 ECTS	Twice a year (August, February)
PhD Biotechnology	Doktor / PhD	-	8	Full time	no	6 Semester	46 CSU / 156.8 46 CSU / 179.8 ECTS	Twice a year (August, February)
PhD Biological Sciences	Doktor / PhD	-	8	Full time	no	6 Semester	46 CSU / 181.6 46 CSU / 184.4 ECTS	Twice a year (August, February)

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

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[4]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
PhD Environmental Science	Doktor / PhD	-	8	Full time	no	6 Semester	46 CSU / 153.2 46 CSU / 179.8 ECTS	Twice a year (August, February)

Introduction

Universitas Gadjah Mada was officially established on December 19, 1949 as a national university. Considered as one of the oldest universities in Indonesia, Universitas Gadjah Mada serves as a pillar of educational awakening in Indonesia, and purports to be a defender and disseminator of Pancasila. When it was founded, Universitas Gadjah Mada only had six faculties. UGM is acknowledged as one of the best universities in Indonesia. In the 2026 QS World University Rankings, UGM is ranked 2nd in Indonesia and 224th in the world.

Currently, Universitas Gadjah Mada has 18 Faculties, one Postgraduate School, one Vocational School, and 24 Research Centres. UGM offers 68 undergraduate, 23 diplomas, 104 master's and specialist, 43 doctorates, and 4 clusters of post-doctoral study programs. The university has enrolled approximately 55,000 students, 1,187 foreign students, and has 2,500 faculty members. UGM maintains a campus of 882 acres (357 ha), with facilities that include a stadium and a fitness centre.

The university is named after Gajah Mada, the Prime Minister of the Majapahit Empire of Java in the 14th century, who is also considered to be the nation's first unifier by some historians. The spelling of the university's name still reflects the old Dutch-era spelling.

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Summary

The experts positively notice the following aspects:

- Atmosphere of openness and cooperation among the students and the teaching staff.
- Students are very satisfied with the degree programmes.
- Dedicated teaching and administrative staff, which is open to further developing the degree programmes.
- Comprehensive tutorial and advisory system for students.
- Employers are satisfied with the graduates' qualification profile.
- Manifold international cooperations and international experience of the teaching staff.
- Good job perspectives.
- Comprehensive quality assurance system and involvement of all stakeholders.
- Well equipped Integrated Laboratory for Research and Testing (LPPT), which offers the teachers and students access to modern and sophisticated instruments.

In the following areas, the experts see room for improvement:

- The module descriptions need to be updated with respect to students' total workload, the awarded ECTS points, prerequisites, literature references, and the actually taught content.
- The scope and scientific demand of the laboratory courses in the Bachelor's and the Master's programmes should be increased.
- The focus of the research projects in the area of Biomedical Engineering and Biotechnology should be sharpened.
- The experts doubt if it is useful to offer a research track in a Master's programme. Master's students should acquire the essential knowledge and skills that are expected from a Master's graduate and should not only concentrate on conducting research activities.
- The admission regulation should make clear what competences are required and under what circumstances students have to join the matriculation programme before starting with a Master's programme.

- The awarded ECTS points need to comply with the students' total workload, which needs to be verified for each course (especially for the research work). It needs to be transparent how many hours of students' workload are required for one ECTS point.
- The study plans should include the ECTS points of each course.
- The English homepages of the degree programmes should include the essential information about the respective programme (profile, PEO, PLO, study plan, and link to the module descriptions).
- Students' academic mobility (incoming and outgoing) is rather low. Indonesian students should be encouraged to spend some time abroad during their studies.
- It would be useful to teach part of the subject-specific courses in English.
- The employers suggest improving Bachelor's and Master's students skills in problem solving e.g. through conducting project based case studies.
- The booking system for the advanced instruments in the centralised research labs should be improved to avoid bottlenecks and a prioritisation for important and urgent research projects should be possible.
- Cutting the university's budget is counterproductive to UGM's goal of becoming a leading research university in South East Asia.

C Expert Report for the ASIIN Seal

1. The Degree Program: Concept, Content & Implementation

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

Evidence:

- Self-Assessment Report
- Objectives-Module-Matrices
- President of the Republic of Indonesia's regulation No. 8 of 2012 on the Indonesian National Qualification Framework
- Bachelor in Food and Agricultural Product Technology webpage: https://s1tphp.tp.ugm.ac.id/en/
- Master in Food Science and Technology webpage: https://s2itp.tp.ugm.ac.id/en/
- Master in Biomedical Engineering webpage: https://bme.pasca.ugm.ac.id/en/
- Doctor in Biotechnology webpage: https://doktoralbioteknologi.pasca.ugm.ac.id/en/front-page/
- Doctor in Biological Sciences webpage: https://biologi.ugm.ac.id/en/doctoral-program/
- Doctor in Environmental Science webpage: https://lingkungan.pasca.ugm.ac.id/
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The experts base their assessment of the learning outcomes on the information provided on the websites and in the Self-Assessment Report of the six degree programmes under review.

For all programmes, Universitas Gadjah Mada (UGM) has described and published Programme Educational Objectives (PEO) and Programme Learning Outcomes (PLO). While the PEO are rather general and refer to the vision and mission of the respective Faculty, the PLO cover a number of specific competences students should acquire in their respective

degree programme. Both, PEO and PLO of each degree programme are published on the respective programme's webpage.

The experts refer to the Subject Specific Criteria (SSC) of the Technical Committee 08 - Agriculture, Forestry and Food Science as a basis for assessing whether the intended learning outcomes of the Bachelor's degree programme Food and Agricultural Product Technology and the Master's degree programme Food Science and Technology, as defined by UGM correspond to the competences as outlined in the SSC. Both programmes are offered by the Faculty of Agricultural Technology of UGM.

The goal of the BFAPT programme is to enable graduates to carry out activities aimed at improving the production and conservation of food, as well as the development of new products. To this end, students should learn to explain the structure and properties of food components / agricultural products (carbohydrates, proteins, lipids, water, other components, and food additives) and chemical changes that occur during processing. By acquiring the necessary chemical, nutritional, toxicological and functional knowledge of raw materials, agricultural methods, and foodstuffs, graduates should be able to explain microbes in food, both beneficial, pathogenic, and destructive, as well as the influence of the food system on their growth, survival, and control. In addition, they should learn about the efficient and suitable usage of physical, chemical, and biological raw materials and should be able to understand and analyse nutritious needs by applying current physicochemical, microbiological, and biological sensory techniques. This is achieved by imparting a solid theoretical and practical scientific background in the natural sciences and by imparting the necessary knowledge and skills about the technological preparation, the analysis, the management, and the conservation of foods and food resources as well as the principles of food engineering, food preservation and processing, packaging materials and methods, cleaning and sanitation, and water and waste management.

Upon completion of the programme, graduates are equipped to pursue diverse roles within the food and agricultural industry. These roles encompass production planning and inventory control, production management, new product development, food quality assurance and control, regulatory compliance, warehousing, purchasing/procurement, as well as sales and marketing. Beyond the industrial sector, graduates can also pursue opportunities in research, education, financial institutions, and government agencies.

The Master's degree programme Food Science and Technology (MFST) focuses on preparing graduates to apply advanced scientific, technological, and analytical skills in the design, production, and evaluation of safe and nutritious foods. Students should develop competencies that combine theoretical knowledge, applied research ability, and professional skills relevant to the food industry and academic research. This includes in-

depth understanding of food chemistry, microbiology, process engineering, and sensory science, enabling them to explain the physical, chemical, and biological principles underpinning food quality and safety. Graduates should understand how diet, health, and consumer behaviour influence food product development and can evaluate how processing parameters affect nutritional and sensory properties. Additionally, they should be able to adapt laboratory-scale findings to pilot and industrial scales, identify main unit operations in processing, and evaluate new technological approaches for efficiency and sustainability. Finally, graduates should be qualified to design and conduct independent research projects using established and innovative analytical methods. They can critically analyse data, interpret experimental results, and assess the validity of scientific findings. They develop skills in method optimization and critical evaluation of scientific literature and research outcomes.

The graduates of the Faculty of Agricultural Technology have the opportunity to work in the food and agricultural products industry (R&D, QA, production), governmental institutions, such as the Ministry of Agriculture, the Ministry of Industry, the Ministry of Fisheries and Marine Affairs, the Research and Development Institute, or become entrepreneurs in the food sector. They can also find employment in fields related to agricultural engineering (research and development for both government and private institutions), design, construction, operation and maintenance, and marketing and management. Many also continue to pursue professional careers in agro-industry/manufacturing (R&D, Quality Control, Production Planning and Control, Supply Chain, Marketing), banking (financial analyst), government/private institutions (industry, trade, agriculture, forestry, fisheries, research institutions, education), and entrepreneurship.

The experts refer to the Subject-Specific Criteria (SSC) of the Technical Committee 05 - Material Science, Physical Technologies as a basis for judging whether the intended learning outcomes of the Master's degree programme Biomedical Engineering as presented in the Self-Assessment Report correspond with the competences as outlined by the SSC.

The Master's degree programme Biomedical Engineering (MBME) is offered by the Graduate School of UGM and is designed to provide students with a robust foundation in sciences and engineering, placing a particular emphasis on a multidisciplinary approach to practical skills in scientific research. Graduates of the MBME programme should be able to conceive, design, and produce equipment and systems for the biomedical field, to collaborate with other healthcare professionals, and to understand technology-based problems, taking into account parameters such as costs, quality, safety, social impact, sustainability, time and professional ethics. In order to achieve these goals, students should

acquire knowledge of the sciences and technological subjects of biomedical engineering, understand the structure and functions of the human body, and be familiar with tools and technologies used in biomedical research and in disease diagnosis, treatment, and prevention. In addition, they should be able to put into practice concepts, techniques, and methods of engineering in healthcare, in line with social, economic and ethic regulations and implications. This includes the ability to understand and apply technical equipment and medical devices.

With respect to scientific activities, students should learn how to design and carry out research projects related to the field of biomedical engineering, to interpret data, to draw conclusions, and to present and communicate their findings, ideas, and solutions. To this end, they should also learn to carry out bibliographic searches, to use databases and other sources of information related to medical technologies and acquire the ability to work independently and as part of a team in an interdisciplinary and international context.

Finally, graduates of the Master's degree programme Biomedical Engineering should have adequate competencies in oral and written communication skills, be adaptive to the development of biomedical sciences, and have adequate English proficiency as well as a social and academic attitude.

The educational objectives and learning outcomes are expected to equip the MBME graduates with the skills required to develop and adapt to the broad spectrum of possible occupations. Graduates have the opportunity to find employment in a various fields including bioinformatics, pharmaceutical and biotechnology companies, diagnostic laboratories, research institutes, medical diagnosis, control and therapy, and technical services in health care.

The experts refer to the Subject-Specific Criteria (SSC) of the Technical Committee Life Sciences as a basis for judging whether the intended learning outcomes of the Doctoral programme Biotechnology (DBiotech) and the Doctoral programme Biological Sciences (DBS), as defined by UGM, correspond with the competences as outlined by the SSC.

The Doctoral programme Biotechnology builds on a Master's degree in biosciences and students should acquire the scientific skills and interdisciplinary key qualifications to enable them to take responsibility for their own research activities and to enable them to solve scientific problems independently, to critically classify and discuss scientific findings and to act responsibly as leaders. Graduates should have an overview of the interrelationships of their chosen biotechnological specialisation, be able to apply scientific methods and findings independently in research and development, be able to plan, carry out and evaluate research projects independently and acquire the in-depth specialist knowledge

and interdisciplinary qualifications necessary for the transition to professional practice in management positions.

Graduates of the Doctoral programme Biotechnology should be able to follow, analyse and interpret current developments in biotechnology, nanobiotechnology and the genetic engineering of microorganisms, plants and animals. They should also be familiar with modern methods and applications of biotechnology and acquire in-depth knowledge of microorganisms. They should therefore be able to carry out and evaluate basic biotechnological processes and be able to apply methods for analysing biologically active substances to investigate the processes of their vital activity. Furthermore, graduates should be able to use modern molecular and genetic principles of biotechnology for the evaluation and synthesis of new products in order to carry out and plan scientific research in the field of biotechnology. Finally, they should be able to obtain information from scientific sources, conduct technical-scientific discussions, carry out laboratory and experimental studies and select the necessary research methods.

The PhD programme Biological Sciences (DBS) has the goal to prepare its graduates to address the challenges of the 21st century ranging from climate change and biodiversity loss to the need for sustainable biological innovation. The DBS programme focuses on tropical biology, addressing biodiversity, conservation, ecosystem sustainability, and biotechnology. This includes the ability to analyse, understand, and solve complex problems in the area of biological sciences. To this end, graduates should be in a position to discuss complex life science issues as well as own research results comprehensively and in the context of current international research and present these in writing and orally. More specifically they should be able to formulate, design, or develop original, new scientific theories, concepts, or ideas in the field of biology through deep and critical independent research. In addition, students of the DBS programme should acquire social competences, such as abstraction ability, analytical thinking, capacity for teamwork, ability to communicate, international and intercultural experience, and are therefore prepared to take on leadership responsibilities.

Occupational fields of the graduates of both doctoral programmes include a broad spectrum of scientific activities in biological and biotechnological areas in industry and business as well as universities and research institutions. For example, graduates are prepared for careers in research and development, academia, quality assurance, regulatory affairs, industrial and environmental biotechnology/biology, and entrepreneurial ventures in the biotech/biological sector.

The goal of the PhD programme Environmental Sciences (DES) is to prepare graduates for designing and carrying out research projects, analysing and solving problems, as well as

making decisions in the field of natural resource management. To this end, graduates should be able to integrate science in collecting, processing and interpreting data as a basis for decision making related to strategic efforts to manage natural resources and the environment. Additionally, they should master the philosophy and theory of environmental science as well as the principles of environmental science concerning diversity, interconnectedness, dependency, harmony, and sustainability between abiotic, biotic, and cultural environmental components. Moreover, they should be well equipped to find and apply new ideas, concepts, theories, approaches, or methods in developing environmental science knowledge through research, producing creative, original, and tested works with a comprehensive environmental science approach.

Graduates of the Doctoral programme in Environmental Science have a wide range of career opportunities across public, private, and research sectors. They are qualified to work as environmental consultants, sustainability officers, or environmental managers in businesses and government institutions, helping organizations meet environmental regulations and implement sustainable practices. This includes areas such as water management, impact assessment, or waste reduction, providing scientific expertise for pollution prevention, natural resource conservation, and renewable energy projects.

In addition to the subject-related qualification objectives, students of all programmes under review programmes should be capable of working autonomously as well as in a team-oriented manner and be able to conduct research activities. Furthermore, they should be able to solve subject-relevant problems, can present their results, have trained their analytical and logical abilities, and have an awareness of possible social and ethical effects of their actions. During the course of their studies, the students should acquire communicative and language skills and have developed a strategy for life-long learning.

During the discussion with the assessment team, students and alumni express their satisfaction with the programmes under review, the learning experience, and future job prospects.

The experts appreciate that UGM aims for high standards as to give their graduates good chances in the national job market as well as a good starting point to transfer to other academic programmes to complete a Master's or a PhD programme. They are convinced that the intended qualification profiles of all six degree programmes under review allow students to take up an occupation, which corresponds to their qualification.

The employers (from universities, research institutions, public agencies, and private companies) confirm during the discussion with the experts, that there is a high demand for the graduates of the degree programmes under review. Furthermore, they emphasise that graduates from UGM are one of their first choice because they are in general better

qualified than graduates from other Indonesian universities are. The excellent and manifold job opportunities are one of the strong points of the study programmes at UGM.

In summary, the experts hold the view that the objectives and intended learning outcomes of all six degree programmes under review are reasonable and well founded. The degree programmes are designed in such a way that they meet the goals set for them. The experts conclude that the objectives and intended learning outcomes of the degree programmes adequately reflect the intended level of academic qualification - EQF 6 for the Bachelor's programme, EQF 7 for the Master's programmes, and EQF 8 for the PhD programmes.

Criterion 1.2 Name of the Degree Programme

Evidence:

- Self-Assessment Report

Preliminary assessment and analysis of the experts:
According to the Self-Assessment report, the nomenclature for the degrees awarded adheres to the regulations established by the Director General of Higher Education, Research and Technology, as outlined in Decree No. 163/E/KPT/2022.

Graduates of the Bachelor's degree programme Food and Agricultural Product Technology are awarded the title Sarjana Teknologi Pangan dan Hasil Pertanian or Bachelor in Food and Agricultural Product Technology. Those completing the Master's degree programme Food Science and Technology receive the title Magister Ilmu dan Teknologi Pangan (Master in Food Science and Technology). Similarly, graduates of the Master's degree programme Biomedical Engineering are conferred the title Magister Teknik Biomedis (Master in Biomedical Engineering). Graduates of the three PhD programmes receive the titles Doktor Bioteknologi (Doctor in Biotechnologi), Doktor Biologi (Doctor in Biology), and Doktor Ilmu Lingkungan (Doctor in Environmental Science) respectively.

The experts confirm that the English translation and the original Indonesian names of all six degree programmes correspond with the intended aims and learning outcomes as well as the main course language (Bahasa Indonesia). Additionally, the names of the degree programmes properly reflect the respective focus and content of the degree programmes.

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Module descriptions

- Bachelor in Food and Agricultural Product Technology webpage: https://s1tphp.tp.ugm.ac.id/en/
- Master in Food Science and Technology webpage: https://s2itp.tp.ugm.ac.id/en/
- Master in Biomedical Engineering webpage: https://bme.pasca.ugm.ac.id/en/
- Doctor in Biotechnology webpage: https://doktoralbioteknologi.pasca.ugm.ac.id/en/front-page/
- Doctor in Biological Sciences webpage: https://biologi.ugm.ac.id/en/doctoral-program/
- Doctor in Environmental Science webpage: https://lingkungan.pasca.ugm.ac.id/
- Discussions during the audit

Preliminary assessment and analysis of the experts:
The BFAPT programme and the MFST programme are offered by the Faculty of Agricultural Technology, the DBS programme is offered by the Faculty of Biology, while the Graduate School of UGM offers the MBME programme, the DBiotech programme and the DES programme.

The curriculum of the BFAPT programme is aligned with the national standards in Indonesia and is designed for eight semesters. Nevertheless, it also possible for excellent students to complete the degree in only seven semesters. Students cannot cover more than 24 CSU per semester. The students' individual study plans are different from each other but have to be approved by their academic advisors and the Vice Dean of Academic and Student Affairs. The programme encompasses 144 CSU (216 ECTS) and is divided into compulsory courses and electives. The courses in the first two semesters convey basic knowledge of natural sciences and languages (Indonesian and English). Courses on the different food sciences are offered from the third to the seventh semester. During the eight semesters, students must complete the community service and the undergraduate thesis.

The curriculum focuses on the scientific principles and technological processes involved in food and agricultural product development, covering areas such as food chemistry, food microbiology, food safety, food engineering and processing, sensory science, and nutrition. The BFAPT programme is designed to equip students with the ability to design processes that add value to agricultural products to produce high-quality, safe, and nutritious food and non-food items, with an emphasis on sustainability and environmental preservation. The curriculum includes major modules on post-harvest physiology, flavour technology, food biotechnology, and food and nutrition design. Students learn about physiological properties and quality maintenance techniques for horticultural products, flavour classification and extraction, genetic modification in food biotechnology, and nutrition

planning in relation to food security and government interventions. The courses include theoretical lectures, laboratory work, and project-based assignments addressing process design, product development, and factory design in an integrated manner.

Graduates should master the core sciences relevant to food and agricultural product technology and develop managerial competencies, including oral and written communication, critical thinking, team collaboration, and leadership skills within technical and non-technical contexts.

The experts point out that UGM should add courses in statistics and in bioinformatics to the curriculum of the BFAPT programme. Both topics are becoming increasingly important and it would be most useful to teach them with an applied focus, e.g. statistics based on R and bioinformatics based on phython.

To improve graduates' employability, the BFAPT programme include internships, which are essential for connecting academic learning with industrial practices, equipping students with practical skills and real-world experience in food and agricultural product technology. The BFAPT programme includes two internship phases: Industrial Internship I and Industrial Internship II. Industrial Internship I is mandatory for students who have completed at least 90 CSU and is typically conducted between the 5th and 6th semester for 50 working days. Coordinated by the university in partnership with companies, the internship provides practical exposure and a small project assignment. Students submit a report and deliver an oral presentation as part of the assessment. Meanwhile, Industrial Internship II is one of the final project options, conducted in the 7th or 8th semester. It involves a four-month placement where students solve real industry problems.

Usually during the last year of studies, undergraduate students must complete the community service. The experts discuss with the programme coordinators about the content and goal of this course. The programme coordinators explain that community service is compulsory for all Indonesian students. It has a minimum length of eight weeks and often takes place in villages or rural areas where students stay and live together with the local people. The course is designed "to allow students to apply their knowledge based on their field in order to empower society." Since the community service usually takes place in remote areas, the students cannot attend any classes during this time. The students work in interdisciplinary teams during the community service in order to advance the society and bring further development about. This course was introduced at all Indonesian Universities in 1971. The assessment of the community service consists of a work plan, programme implementation, and activity report. The experts understand that students should work for the benefit of the community and the Indonesian society during the community service and support this concept.

Both Master's programmes as well as the three Doctoral programmes are offered as a Regular Track and a Research Track. The Research Track is designed for students who already have research experience and wish to focus on their career as researchers. Therefore, the proportion of coursework is reduced and is mainly focused on strengthening the fundamental background related to research design and the finalisation of the research proposal that has been submitted by the student. The dissertation research is expected to start from the second semester and continue until the sixth semester, with an additional graduation requirement of one more publication compared to the Regular Track. The curricula of the Research Track place a strong emphasis on the unique academic background and research interests of each individual student.

The selection of elective courses to support dissertation research is decided during a meeting involving the student's supervisors and the Head of the Study Programme. In this meeting, the student's general research topic, academic background, and prior work are carefully reviewed.

The curriculum of the MFST programme, which was established in 2021, is designed to impart competencies in research methodology, advanced food analysis, and scientific communication, before engaging in thesis work. The total credit requirement is 40 CSU (119.4 ECTS) for the Regular Track with 12 CSU allocated for the Master's thesis. The Research Track requires 36 CSU (112.5 ECTS) with 30 CSU for the Master's thesis. The compulsory and elective courses to be taken by the MFST students encompass 28 CSU (51.8 ECTS) for the Regular Track and 6 CSU (11.1 ECTS) for the Research Track. The thesis is carried out in two semesters for the Regular Track and three semesters for Research Track. The first semester includes compulsory courses, such as: Scientific Communication I, Advanced Food Analysis, and Research Methodology, alongside electives tailored to students' research interests. The second semester includes further electives and the Independent Study course, guiding students in developing their research proposals. Thesis work begins in the third semester and continues into the fourth, accompanied by Scientific Communication II, which supports manuscript writing and publication preparation. The general structure of the MFST programme is depicted in the following diagrams:

Regular Track:

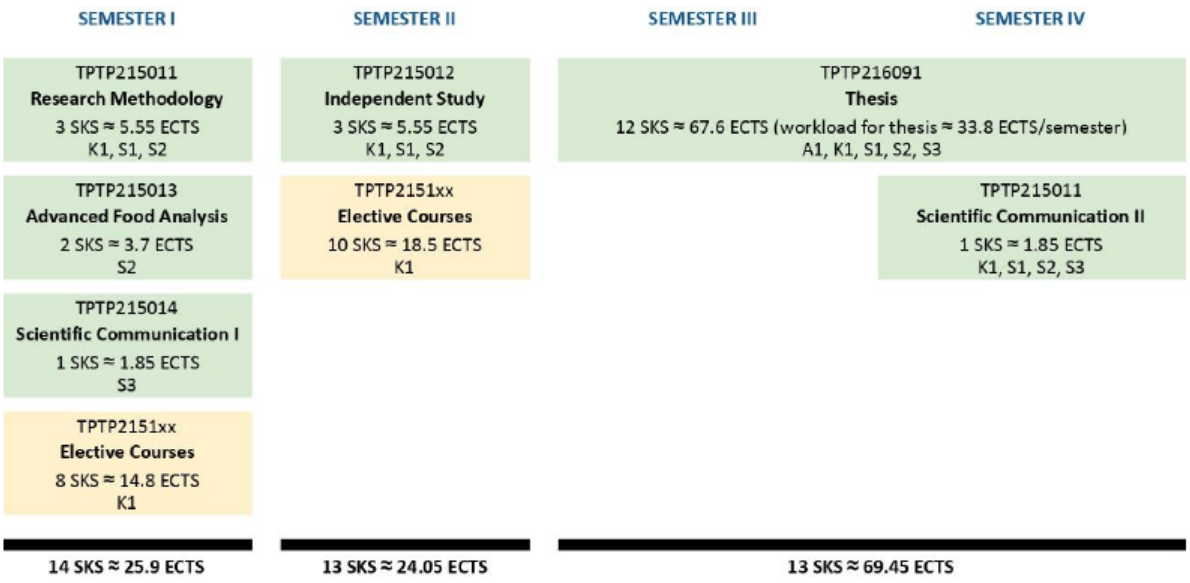


Diagram 1: Structure MFST programme, Regular Track, Source: SAR UGM

Research Track:

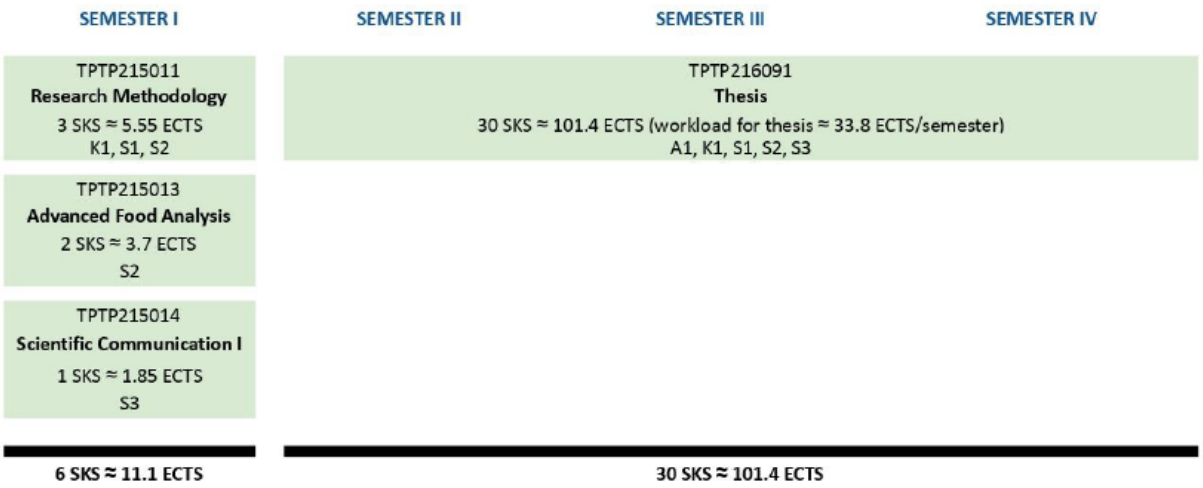


Diagram 2: Structure MFST programme, Research Track, Source: SAR UGM

The graduates of the Faculty of Agricultural Technology have the opportunity to work in the food and agricultural products industry (R&D, QA, production), governmental institutions, such as the Ministry of Agriculture, the Ministry of Industry, the Ministry of Fisheries and Marine Affairs, the Research and Development Institute, or become entrepreneurs in the food sector. They can also find employment in fields related to agricultural engineering (research and development for both government and private institutions), design, construction, operation and maintenance, and marketing and management. Many also continue to pursue professional careers in agro-

industry/manufacturing (R&D, Quality Control, Production Planning and Control, Supply Chain, Marketing), banking (financial analyst), government/private institutions (industry, trade, agriculture, forestry, fisheries, research institutions, education), and entrepreneurship.

As described in the Self-Assessment Report, the MBME programme was established because ”the development of technology in the field of modern medicine demands interrelated multidisciplinary cooperation in creating new and rapid breakthroughs based on technology. Biomedical Engineering is necessary to meet the needs of improving the quality of public health in this modern era. Biomedical Engineering experts will apply engineering principles to understand, modify or control human biological systems, as well as design and manufacture products that can monitor physiological functions, help diagnose and treat patients.”

The curriculum of the MBME programme is designed to address these challenges so that the graduates are able to solve medical problems using engineering principles. As in the other graduate programmes, students can choose between the Regular Track (44 CSU/114 ECTS, consisting of 21 credits of compulsory subjects, 15 CSU of electives, and 8 CSU for the Master’s thesis) and the Research Track (44 CSU/114.6 ECTS, consisting of 12 CSU of compulsory subjects, 24 CSU of electives related to research, seminars, publication, and 8 CSU for the Master’s thesis). This includes courses such as Research Proposal, Research Proposal Seminar, Research I, Research Result Seminar I, Publication Manuscript I , Research II, Research Result Seminar II, Publication Manuscript II, and Thesis.

The first semester is dominated by compulsory courses, while the second semester mostly consist of elective courses. Both tracks are designed to equip students with strong academic and research competencies in the field of biomedical engineering. The third and fourth semesters are for the thesis, including research, thesis manuscript writing, and exam. Elective courses are grouped into 5 fields, namely :1. Biomaterials, 2. Biomedical Instrumentation, Signal, Imaging & Computing, 3, Bioinformatics Instrumentation, 4. Medical Devices Development, and 5. Healthcare Systems. The general structure of the MBME programme is depicted in the following diagrams:

Regular Track:

Semester 1	Semester 2	Semester 3	Semester 4
Biomedical Engineering Principles (SPSTB212101/3 credits/5,4 ECTS)	Applied Biostatistics (SPSTB212206/3 credits/5,4 ECTS)	Elective Course 4 (SPSTB212XXX/3 credits/5,4 ECTS)	
Applied Biomedical System Design (SPSTB212102/3 credits/5,4 ECTS)	Bioethics & safety (SPSTB212207/3 credits/5,4 ECTS)	Elective Course 5 (SPSTB212XXX/3 credits/5,4 ECTS)	
Anatomy & Physiology for Biomedical Engineering (SPSTB212103/3 credits/5,4 ECTS)	Elective Course 1 (SPSTB212XXX/3 credits/5,4 ECTS)	*Thesis (SPSTB212499/8 credits/49,2 ECTS (2 semester))	
Applied Mathematics for Bioengineering (SPSTB212104/3 credits/5,4 ECTS)	Elective Course 2 (SPSTB212XXX/3 credits/5,4 ECTS)		
Research Methodology & Experimental Design (SPSTB212105/3 credits/5,4 ECTS)	Elective Course 3 (SPSTB212XXX/3 credits/5,4 ECTS)		
TOTAL: 15 credits (27 ECTS)	Total: 15 credits (27 ECTS)	Total: 6 credits (10,8 ECTS); Research: 24,6 ECTS	Total: 8 credits (24,6 ECTS)
TOTAL: 44 credits (114 ECTS)			

Diagram 3: Structure MBME programme, Regular Track, Source: SAR UGM

Research Track:

Semester 1	Semester 2	Semester 3	Semester 4
Biomedical Engineering Principles (SPSTB212101/3 credits/5,4 ECTS)	Research 1 (SPSTB232262/5 credits/14,05 ECTS)	Research 2 (SPSTB232262/5 credits/14,05 ECTS)	Thesis (SPSTB232499/8 credits/22,5 ECTS)
Elective Course 1 (SPSTB212XXX/3 credits/5,4 ECTS)	Research Results Seminar 1 (SPSTB232263/2 credits/5,62 ECTS)	Research Results Seminar 2 (SPSTB232263/2 credits/5,62 ECTS)	
Elective Course 1 (SPSTB212XXX/3 credits/5,4 ECTS)	Publication 1 (SPSTB232264/4 credits/11,24 ECTS)	Publication 2 (SPSTB232264/4 credits11,24 ECTS)	
Research Proposal (SPSTB232160/3 credits/8,43 ECTS)			
Research Proposal Seminar (SPSTB232161/2 credits/5,62 ECTS)			
Courses: 9 credits/16,2 ECTS; Research: 5 credits/14,1 ECTS	Research: 11 credits/30,9 ECTS	Researh: 11 credits/30,9 ECST	Research: 8 credits/22,5 ECTS
TOTAL: 44 credits (114,6 ECTS)			

Compulsory Course
Elective Course
Research/Thesis

Diagram 4: Structure MBME programme, Research Track, Source: SAR UGM

MBME graduates cab find jobs as teachers, researchers, and professional practitioners such as health care system management, entrepreneurship, and as consultants.

In the first semester, doctoral students are introduced to essential philosophical and methodological foundations through courses in philosophy of science and research methodology. These courses are intended to build critical thinking skills and provide a theoretical basis for scientific inquiry. During the second and third semesters, the focus shifts toward developing a comprehensive research proposal. This phase includes intensive guidance on literature reviews, problem formulation, research design, and methodology, all aimed at preparing students for their dissertation research.

From the fourth semester onward, students are expected to fully engage in independent research. Over the final three to four semesters, they are encouraged to conduct fieldwork, analyse data, produce scholarly publications, and complete their doctoral dissertations. During the research phase, students submit progress reports, detailing their work, methodology, and future plans, which the promotor team reviews to gauge progress and provide feedback. The Doctoral programmes culminate in the dissertation, an original contribution to the field. The dissertation's quality and completeness are crucial for assessing the student's workload and research skills. Finally, students must defend their dissertation in an oral examination.

The DBiotech programme also offers two different tracks. The Regular Track, which is designed for six semesters and encompasses 46 CSU (156.8 ECTS). The curriculum consists of 12 CSU for courses (general and elective), and 34 CSU for the doctoral dissertation. The Research Track is also designed for six semesters and encompasses 46 CSU (179.8 ECTS). The curriculum consists of 6 CSU for courses (general and elective), and 40 CSU for the doctoral dissertation. The electives allow students to tailor their courses to their dissertation focus and the dissertation work comprises a series of activities, including a comprehensive examination, research, first and second international seminars, publications, semester-end monitoring by the study programme, and the final doctoral examination. The programme offers five areas of concentration: Agricultural Biotechnology, Medical Biotechnology, Industrial Biotechnology, Environmental Biotechnology, and Biomedical Engineering. The general structure of the DBiotech programme is shown in the following table:

REGULAR TRACK	*BY RESEARCH TRACK*
Compulsory Programme Courses (MKWP)	**Compulsory Programme Courses (MKWP)**
• Scientific Research Methodology (3 SKS) • Selective Topics in Biotechnology (3 SKS) • Bioinformatics and Data Analysis in Biotechnology (2 SKS)	• Scientific Research Methodology (3 SKS) • Selective Topics in Biotechnology (3 SKS)
Dissertation Supporting Courses (MKPD)	**Dissertation Supporting Courses (MKPD)**
2-4 Elective MKPD Courses (4-10 SKS)	0-4 Elective MKPD Course (2-8 SKS)
Dissertation Group Courses (MKD) (34 SKS)	**Dissertation Group Courses (MKD) (38 SKS)**
• Comprehensive Exam • International Conference I • International Conference II • Publication • Dissertation Promotion	• Comprehensive Exam • International Conference I • International Conference II • Publication I • Publication II • Dissertation Promotion

Table 1: Structure DBiotech programme, Source: SAR UGM

The curriculum of the Doctor Environmental Science programme is designed to be finished in six semesters and focuses on interdisciplinary approaches to address complex environmental challenges. The total workload completed by the students is 46 CSU, which is equivalent to 153.2 ECTS for the Regular Track and 179.8 ECTS for the Research Track.

The Regular Track is designed to accommodate students who are practitioners, while the Research Track is intended for students with backgrounds in research or educational institutions. In the first semester, the curriculum is designed to provide students with scientific thinking skills and provide students with scientific research methods to find new findings. In the second semester, the curriculum provides elective courses to help students write a dissertation proposal. Students are expected to finish the proposal at the second semester's end. In the second year, students are expected to collect data, do laboratory work, and data analysis, as well as drafting publications. While waiting for scientific papers to get published, students are expected to draft their PhD dissertation. For dissertation work, 34 CSU in the Regular Track and 38 CSU in the Research Track correspond to 135.2 ECTS and 169 ECTS, respectively. The general structure of the DES programme is shown in the following table:

REGULAR TRACK	***BY RESEARCH TRACK***
Compulsory Programme Courses (MKWP)	**Compulsory Programme Courses (MKWP)**
• Philosophy of Science (2 SKS/3,6 ECTS) • Research Methods (2 SKS/3,6 ECTS) • Capita Selecta (2 SKS/3,6 ECTS)	• Philosophy of Science (2 SKS/3,6 ECTS) • Research Methods (2 SKS/3,6 ECTS) • Capita Selecta (2 SKS/3,6 ECTS)
Dissertation Supporting Courses (MKPD)	**Dissertation Supporting Courses (MKPD)**
• 2-4 Elective Course (4-8 SKS/7,2-14,4 ECTS)	• No Course
Dissertation Group Courses (MKD)	**Dissertation Group Courses (MKD)**
Dissertation Total (36 SKS/135,2 ECTS) • Proposal • Publication (1 International Publication) • Thesis and exam	Dissertation Total (40 SKS/169 ECTS) • Proposal • Publication (2 International Publication) • Thesis and exam

Table 2: Structure DES programme, Source: SAR UGM

The Doctor in Biological Sciences is one of the four degree programmes offered by the Faculty of Biology, Universitas Gadjah Mada. Officially established on 20 September 1993, the programme is designed to provide advanced academic education with a strong focus on tropical biology. The curriculum of the DB programme offers two pathways: a Regular Track, which includes more structured courses to strengthen theoretical foundations, and a Research Track, which places greater emphasis on independent research.

The curriculum of the DB programme requires a total of 46 CSU for both the Regular Track (181.6 ECTS) and the Research Track (184.4 ECTS). The Regular Track combines coursework and dissertation research, while the Research Track focuses on independent research with minimal coursework, aimed at producing high-quality publications. Both tracks are designed for completion within 6 semesters, promoting advanced expertise in biology. In both the Regular and Research Tracks, coursework is completed in the first semester, allowing students to focus exclusively on dissertation-related activities from 2nd semester to 6th semester. The workload of the Research Track is slightly higher than that of the Regular Track, which is justified by the research-intensive nature of the Research Track, with its focus on independent research activities such as laboratory or fieldwork, data processing, and manuscript writing essential for producing high-quality research output. The general structure of the DB programme is shown in the following table:

REGULAR TRACK	*BY RESEARCH TRACK*
Compulsory Programme Courses (MKWP)	**Compulsory Programme Courses (MKWP)**
• Research Methodology and Scientific Writing (2 SKS) • Phylosophy of Science (2 SKS) • Selected Topic for Dissertation (2 SKS)	• Research Methodology and Scientific Writing (2 SKS) • Phylosophy of Science (2 SKS)
Dissertation Supporting Courses (MKPD)	**Dissertation Supporting Courses (MKPD)**
3-4 Elective MKPD Courses (6-8 SKS)	1-2 Elective MKPD Course (4 SKS)
Dissertation Group Courses (MKD) (34 SKS)	**Dissertation Group Courses (MKD) (38 SKS)**
• Comprehensive Exam (4 SKS) • Scientific Conference (3 SKS) • Dissertation Research I (2 SKS) • Publication (8 SKS) • Dissertation Research II (2 SKS) • Dissertation Research III (2 SKS) • Dissertation Appropriateness (3 SKS) • Dissertation Final Exam (10 SKS)	• Comprehensive Exam (2 SKS) • Dissertation Research I (4 SKS) • Dissertation Research II (4 SKS) • Publication I (6 SKS) • Dissertation Research III (4 SKS) • Scientific Conference (2 SKS) • Publication II (6 SKS) • Dissertation Final Exam (10 SKS)

Table 3: Structure DB programme, Source: SAR UGM

Graduates of the DB programme are expected to play a significant role in advancing science and society. They are prepared to become independent researchers, scholars, and educators, capable of producing innovative research in tropical biology and related fields. In addition, graduates are equipped to contribute as policy advisors, consultants, and leaders in academic, governmental, and industrial sectors, as well as innovators who can transform biological research into applications that promote biodiversity conservation, biotechnology, and sustainable development.

Doctoral students are free to take courses from other doctoral programmes at UGM or other universities. This approach enhances the flexibility and adaptability of the programme, allowing students to tailor their education to align with their research

interests and career goals. It provides opportunities for students to gain in-depth knowledge in specific areas that are relevant to their dissertation research, even if those topics are not explicitly covered in the core curriculum. Moreover, the option to explore courses from other Doctoral programmes encourages interdisciplinary learning and collaboration.

The experts ask during the discussions on-site for what reason the Master's and the Doctoral programmes each offer a Regular and a Research Track. The programme coordinators explain that candidates who apply for the Research Track are usually already working in a research centre and bring, thus, have more experience and specific interests in the research work. The candidates for the Regular Track are, on the other hand, mostly, recent graduates from the respective Master's or Bachelor's programmes. The programmes offer initial guidance and support that is complemented by some elective courses related to their research project topics and orientation for writing publications. A comparison of the two curricula reveals that the differences in terms of the scope and intensity of graduates' ability to pursue a research project and document their progress as part of a manuscript seems to be balanced when supervised by experienced professors. This would allow graduates from both tracks to attain a similar level of qualification. The students decide the programme path independently in their interview admission process.

However, the experts doubt if it is useful to offer a research track in a Master's programme. Master's students should acquire the essential knowledge and skills that are expected from a Master's graduate and should not only concentrate on conducting research activities. From the experts point of view, the research tracks in both Master's programmes do not ensure that this goal is reached, because the small number of compulsory courses do not cover all areas.

All courses taught in the programmes under review are delivered in Bahasa Indonesia. However, most lecturers use English in their presentations and all study materials are also provided in English. If there are international students in the classes, the lectures are usually held in English. Furthermore, students are encouraged to attend summer courses that are held in English with international students and guest lecturers. Moreover, international guest lectures are regularly invited, who teach their courses in English, and the UGM Language Centre offers English language courses. The students confirm in the discussion with the experts that they are satisfied with the existing opportunities to improve their English proficiency. However, the experts suggest teaching part of the subject-specific courses in English. As English is the "lingua franca" in sciences, studying partly in English gives students the vocabulary and communication skills needed to work in global environments. Many academic papers, conferences, and research collaborations are conducted in English. Learning the subject-specific content in English makes it easier for

students to participate, publish, and engage internationally. Moreover, students who study in English can more easily participate in international exchange programmes and at the same time it is easier for the study programmes to attract international students. This point of view is supported by the teachers who emphasise that a reason for limited mobility of students into non-Asian countries is their lacking English proficiency – especially active speaking skills.

The curriculum review of all programmes under review is conducted independently, involving internal stakeholders such as faculty leaders, program managers, course lecturers, and external stakeholders. The curriculum review is carried out at least once every five years and as needed. The individual modules are evaluated and revised as necessary each year at the beginning of the new semester to ensure that they are aligned with the PLOs mandated to each course. At the end of semester, the degree programme also conducts portfolio analysis to measure the achievement of the PLOs of each course.

The experts appreciate that UGM has already issued an official AI guideline. As the use of artificial intelligence (AI) becomes more and more important, the experts point out that it is important to teach students how to correctly use AI and to give them the tools, knowledge, and mindset to thrive in a digital, AI-augmented world. An official AI guideline provides clarity, consistency, and ethical direction for students, faculty, and staff.

Moreover, UGM has established the AI Center of Excellence as a strategic hub for research, innovation and application of Artificial Intelligence at UGM. It integrates multidisciplinary expertise (engineering, computer science, natural sciences, social sciences, etc) to address social, industrial, and academic challenges. The experts see that UGM recognises that AI is not just a technical add-on but a fundamental tool for enhancing research output and educational innovation. However, the experts point out that the module descriptions should make transparent in what way AI is applied in the respective courses. Currently, the use and application of AI is mentioned in no module description.

The experts discuss during the audit, the scope and scientific demand of the laboratory courses, especially in the BFAPT, MFST, and MBME programmes. They observe that it would be useful to offer more and laboratory courses in the Bachelor's and the Master's programmes because students need to be equipped with essential hands-on experience, which enhances their understanding of theoretical concepts through practical application, and prepares them for real-world challenges in food technology and biomedical engineering. In addition, the scientific demand of the laboratory courses should be increased because students need to be able to actively engage in independent practical work and data analysis, which are critical skills for food technologists and biomedical engineers. Students should learn to use instruments, conduct experiments, analyze results,

and handle materials safely, which are essential skills for food technologists and biomedical engineers.

The experts see that it would be very useful to sharpen the focus of the research projects in the area of Biomedical Engineering and Biotechnology. Having a distinctive research focus in a Master's programme in Biomedical Engineering is useful because it defines a clear area of expertise that drives innovation and advances knowledge in that niche. A distinctive research focus gives the programme a clear thematic direction — for example, medical devices or biomaterials — which helps define its strengths and attract students and faculty with aligned interests. Biomedical engineering spans medicine, physics, and engineering. A defined focus ensures these elements integrate around a shared research goal rather than becoming fragmented. Finally, focusing resources (labs, staff, funding) on a few key research areas allows for more advanced facilities, deeper expertise, and higher-impact outcomes.

The experts observe a similar issue in the DBiotech programme. Having a distinctive research focus in a Doctoral programme in Biotechnology is extremely valuable — academically, scientifically, and strategically. Biotechnology is a broad, rapidly evolving field, so defining a clear focus helps the programme stand out and produce more meaningful outcomes. Biotechnology covers areas from molecular biology to industrial bioprocessing and bioinformatics. A distinctive focus (e.g., agricultural biotech, medical biotech, environmental biotech) gives the programme a clear academic identity, attracting high-quality students, and research partners. Concentrating on a particular domain allows the programme to become a centre of excellence rather than spreading resources thinly across many topics.

The experts discuss with the programme coordinators if topics such as pharmaceutical biotechnology, immunology, or bioinformatics are discussed in the DBiotech programme. They learn that these areas are treated in the courses, however, the concrete content is not accurately described in the Module descriptions. The experts are satisfied with the actually taught content but emphasise that this needs to be correctly reflected in module descriptions (see criterion 4.1). For example, the module descriptions should make transparent if AI is used and if so in what way.

In the discussion with the experts, the employers suggest improving Bachelor’s and Master’s students skills in problem solving. This could be achieved e.g. through project based case studies. This helps students to apply theoretical knowledge to realistic, often complex, problems — mirroring how challenges arise in industry, research, or academics. Additionally, students can develop critical thinking skills and learn to define problems, analyze data, identify root causes, and propose evidence-based solutions rather than memorizing information. Moreover, project-based learning typically involves

collaboration, helping students practice teamwork, leadership, and the ability to communicate technical findings effectively. The experts support this suggestion and point out that improving students' problem-solving abilities through project-based case studies helps them to apply knowledge and skills to address real-world challenges. The experts also suggest that these case-studies could be offered in English. This would help the students to develop also their active English speaking skills

After analysing the module descriptions and the study plans the experts confirm that all degree programmes under review are divided into modules and that each module is a sum of coherent teaching and learning units. All working practice intervals and internships are well integrated into the curriculum and the supervision by the respective faculty guarantees for their respective quality in terms of relevance, content, and structure. The study plans are meticulously crafted to ensure a balance between theoretical knowledge and practical application, preparing graduates for various roles within the pharmaceutical industry and healthcare settings.

In addition, the experts gain the impression that the choice of modules and the structure of the curriculum ensures that the intended learning outcomes of the respective degree programme can be achieved.

The experts confirm that the graduates of all degree programme under review are well prepared for entering the labour market and can find adequate jobs in Indonesia. During the discussion with the experts UGM's partner from the industry/public sector confirm that the graduates have a broad scientific education, are very adaptable, and have manifold competences, which enables them to secure and excel in suitable employment opportunities.

Periodic Review of the Curriculum

The curriculum of each study programme at UGM is systematically evaluated every five years by the respective curriculum committee to ensure its continued relevance and alignment with current academic and industrial developments. In addition to this major evaluation, minor reviews and revisions are conducted annually to address emerging trends, scientific advancements, and evolving stakeholder needs. Curriculum development begins with the collection of stakeholder feedback through benchmarking against comparable Programmes at other universities, tracer studies, and labour market surveys. These activities are facilitated through the SIMASTER platform.

Moreover, UGM implements has a robust internal quality assurance system to monitor curricula performance, primarily through the SIMONI platform. This system enables deans, teachers, and programme coordinators to systematically plan, monitor and evaluate the

learning and teaching processes Monitoring activities include the semesterly review of module handbooks and learning contracts, as well as the evaluation of course performance. All components of the quality assurance system are seamlessly integrated within the university's central academic platform SIMASTER to ensure a comprehensive curriculum monitoring and improvement.

International Mobility

UGM provides some opportunities for students to conduct stays abroad and to join exchange programmes. The International Office at UGM is responsible for managing and coordinating the international activities such as organising student mobility programmes, developing and maintaining relationships with partner institutions and organisations around the world, recruiting and admitting international students, providing support and assistance to international students during their time at UGM, such as helping with housing, visa issues, and other practical matters.

Students' international academic mobility is explicitly supported by the Indonesian Government. For example, through Indonesian International Students Mobility Awards (IISMA), a scholarship programme from the Ministry of Research, Technology and Higher Education starting from 2021. However, on April 29, 2025, the Ministry confirmed that IISMA will continue under a new paradigm called "Kampus Berdampak" (Impactful Campus). However, it will no longer be directly funded by the Indonesian government. Instead, universities are expected to run the programme independently — working with their own international partners and possibly involving private contributions. As clarified by the Ministry, the decision to withdraw direct funding is due to IISMA's relatively small scale and high cost. The goal now is for universities to manage the programme with external partners or sponsors.

The new policy of the Indonesian government actively supports any activities outside of the university by releasing a regulation on the Merdeka Belajar-Kampus Merdeka (MBKM), which requires the university to promote undergraduate students who want to spent part of their academic education outside UGM (Minister of Education and Culture Regulation Number 3, Year 2020). UGM recognizes the courses taken by the students outside UGM, based on the comparability of the intended learning outcomes. The experts consider this regulation sufficient.

The MBKM provides flexibility for undergraduate students to explore different fields of study and interact with the wider community. This is in accordance with the experts' feedback during the previous accreditation procedure, which emphasized that the BP programme should facilitate more opportunities for students to acquire international experience.

UGM participates at the EQUITY (Enhancing Quality Education for International University Impacts and Recognition) programme, which is a strategic initiative funded by the Indonesia Endowment Fund for Education (LPDP) through the Ministry of Research, Technology and Higher Education. Its primary objective is to improve the quality and global recognition of selected Indonesian public universities.

The EQUITY programme for Indonesian universities includes 23 State Universities as part of a government initiative to enhance quality and international recognition. The participating universities are selected by the Ministry of Research, Technology and Higher Education to improve their position in global rankings. The programme supports these universities through funding for research, innovation, internationalization, and collaboration efforts. UGM, for example, received a funding allocation of approximately IDR 83 billion and works closely with industry and global academic partners under this programme.

The BFAPT programme fosters various forms of academic mobility, such as international competitions, summer schools, and student exchanges, and research fellowships. These fellowships are intended for students engaged in final year projects that are funded by external sources, such as the JASSO Student Support Programme in collaboration with Yamagata University in Japan, the SUIJI Service-Learning Programme in partnership with Kochi University in Japan, the Linnaeus Palmae Programme in conjunction with Boras University in Sweden, and the Erasmus Programme in collaboration with the University of Denmark. Additionally, during the last two years, four BFAPT students have obtained funding through the IISMA programme and have spent an entire semester studying abroad at institutions such as the University of Twente (Netherlands), University of Warsaw (Poland), Korea University (South Korea), and KTH Royal Institute of Technology (Sweden).

The MFST programme fosters global engagement through structured student mobility initiatives, including international conferences, fellowship programmes, and innovation competitions. MFST students engage in diverse mobility programmes across prestigious institutions worldwide, supported by funding frameworks such as the Erasmus+ Programme, JASSO Scholarships, and the Sakura Science Programme, among others. Notably, partnerships with the University of Cádiz (Spain) enable final-year projects through Erasmus+ funding, while the Yamagata University (Japan) hosts scholars under the Student Exchange Support Programme (2022–2023) and JASSO scholarships. The MFST programme further offers a dual degree pathway with Prince of Songkla University (Thailand), alongside annual specialized training at Silpakorn University (Thailand) and research exchanges via the Sakura Science Programme at Shizuoka University (Japan). Additionally, the SUIJI Joint Programme with Ehime University (Japan) and participation in the U21 Global Citizens Consortium (UK) provide students with platforms to address transnational food security challenges and sustainability innovation. The dual degree

option with Prince of Songkhla University (Thailand) was taken by four MFST students and one student participated at the dual degree programme with Kyoto University (Japan).

In addition to the double degree programmes, MFST students can engage in student mobility programmes which enable the students to do research for their thesis in overseas universities. The partner universities are University of Cadiz (Spain), Yamagata University (Japan), Tohoku University (Japan), and Ehime University (Japan).

Students' academic mobility also supported in the three study programmes that are offered by the Graduate School of UGM. In the MBME programme, students' mobility activities include international conferences, fellowship programmes, and competitions.

In early 2024, a MBME student took part in the prestigious startup competition "Fight for Access for women entrepreneurs", a platform designed to support and empower women innovators in the business world. Throughout the competition, participants were provided with intensive training and mentorship from the National University of Singapore (NUS), one of Asia's leading institutions in entrepreneurship and innovation. As a reward, the student was given the incredible opportunity to represent their innovation at the 77th World Health Assembly (WHA) in Switzerland.

Another MBME student was selected to participate in the highly competitive "International Internship Pilot Programme" offered by the National Science and Technology Council of Taiwan. The Programme lasts for a period of three months and is specifically tailored to provide students with hands-on experience and exposure to cutting-edge innovations in their respective fields. Finally, in 2024 a MBME student had an opportunity to join an internship programme at different universities and research institutions in Austria.

In the DBiotech programme, students have the opportunity to conduct internships, student exchanges, and joint research projects abroad. Additionally, a double degree programme is offer in cooperation with Gifu University, but so far, only one students has taken this option. Another DBiotech student was selected to participate in a student exchange programme with the University of Helsinki, Finland, where he conducted research on antimicrobial resistance gene monitoring in the agricultural environment of Yogyakarta. In 2024, another DBiotech student participated in an internship programme at the Tokyo University of Agriculture, Japan. During the internship, the student conducted research as part of a joint supervision agreement between UGM and the Tokyo University of Agriculture. The cost of travel and accommodation for this internship was covered by the Australian Centre for International Agricultural Research (ACIAR). A DBiotech student has the opportunity to conduct research the doctoral thesis at the University of Kansas. This research, scheduled from September 2024 to February 2025, is made possible through collaboration with the co-promoter, who is affiliated with the University of Kansas. Two

students from the DBiotech programme participated in an internship programme at Nara Institute of Science and Technology (NAIST) Japan from February–March 2025. Additionally, another DBiotech student will participate in a joint research programme at the Australian National University (ANU). Finally, several students have had the opportunity to engage in joint supervision with professors from international partner universities and the programme regularly welcomes visiting professors from various countries to deliver guest lectures.

Several students from the DES programme have actively participated in various academic and professional activities at both national and international levels, reflecting their commitment to advancing scientific knowledge and enhancing their expertise in environmental science, climate change, and geosciences. This includes participating at conferences, symposiums, and scientific exchange programmes. In 2024, a student attended The 10th International Conference on Climate Change (ICCC) 2024, hosted by Universitas Sebelas Maret (UNS) in Surakarta, Indonesia. In the same year, another student attended the Political and Socio-Cultural Aspect of Karst Symposium, which was part of The 5th Asian Transdisciplinary Karst Conference 2024. Another student participated in the 2024 Australia-Indonesia Muslim Exchange Programme (AIMEP), a cultural and academic exchange initiative designed to strengthen ties between Muslim communities in Indonesia and Australia, particularly in the context of social development and environmental sustainability.

In 2023, several students engaged in activities cantered around environmental conservation and academic networking. One notable initiative was Lamun Warrior 2023 "The Seagrass Conservation Movement", a conservation effort aimed at raising awareness about the crucial role of seagrass ecosystems in maintaining marine ecological balance. Beyond conservation and cultural exchange programmes, several DES students actively contributed to scientific conferences addressing environmental and sustainable agricultural issues. For example, they participated in the 4th International Conference on Environmentally Sustainable Animal Industry (ICESAI 2023), which focused on sustainable approaches to livestock production, as well as the 4th International Conference on Smart and Innovative Agriculture (ICoSIA 2023), which explored advancements in agricultural technology and innovation. Furthermore, they engaged in geosciences and environmental management discussions through their involvement in the 4th Geoscience and Environmental Management Symposium, while also expanding their knowledge in geoinformatics at the 8th Geoinformation Science Symposium 2023. In 2022, participation in the IOP Conference Series: Earth and Environmental Science has also been a significant part of students' academic engagement.

In the DB programme, which is offered by the Faculty of Biology, over the past years, several students have actively participated in various international academic mobility programmes. A total of seven students have undertaken international research activities and international internships. Notably, students have conducted research in collaboration with prestigious institutions including Montpellier SupAgro in France, the University of Greifswald in Germany, BOKU University in Austria, Humboldt-Universität zu Berlin, the University of Edinburgh, and NAIST in Japan. Their research topics range widely from plant stress physiology, co-infection in paediatric respiratory diseases, microbial diversity, and metabolomic profiling to gene expression analysis and algal bio-fixation. Students' mobility not only covers joint research activities but also participating at of international conference and seminars.

In addition, the DB programme fosters international and national collaboration through its joint supervision scheme, involving both global and local experts. Based on the list of joint supervisors, several students have benefited from mentorship by international researchers from renowned institutions such as CIRAD (France), Greifswald University (Germany), Wageningen University (Netherlands), Museum für Naturkunde (Germany), Leiden University (Netherlands), and BOKU University (Austria). At the same time, the DB programme also engages national supervisors from the National Research and Innovation Agency (BRIN), Institut Pertanian Yogyakarta, Universitas Muhammadiyah Semarang, and the Marine Research Centre.

Doctoral students have several opportunities for international mobility, typically facilitated by research collaborations between academic supervisors and international research partners that actively engage Doctoral students.

The students confirm during the discussion with the experts that several opportunities for international academic mobility exist.

The experts discuss with UGM's management if there is a strategic concept to increase the international mobility of students and teachers. They learn that UGM has many international partners, has developed a fellowship programme, and provides scholarships for foreign students that what to study at UGM. Moreover, international guest lecturers are invited, and a cooperation with agreement with the German Academic Exchange Service (DAAD) and the similar Dutch organisation exists for senior professors that are invited to teach for some time at UGM. Finally, summer courses are conducted with international participants and double degree and exchange programmes are established with different countries. The experts support these measures; however, they point out that students' academic mobility in the six study programmes under review is rather low (incoming and outgoing). It is especially low with respect to countries outside South-East

Asia. For this reason, the experts recommend encouraging students to spend some time abroad during their studies and to include courses that are at least partly taught in English in the curricula.

In summary, the experts appreciate the effort to foster international mobility and support UGM to further pursuing this path.

Criterion 1.4 Admission Requirements

Evidence:

- Self-Assessment Report
- Academic Guidelines
- MEHRT, Regulation no. 48/2022 on the admission for Bachelor's programmes at state universities
- UGM webpage: https://um.ugm.ac.id/ragam-seleksi-sarjana-dan-sarjana-terapan-2023/
- Discussions during the audit

Preliminary assessment and analysis of the experts:
The admission and selection process for prospective students in the Bachelor's programmes adheres to UGM's established guidelines for new student admissions. This process is managed by the New Student Admissions Office through a specialized admission platform. Comprehensive information regarding admission requirements, schedules, registration locations, and selection tests is published online, ensuring accessibility for all stakeholders.

According to the Self-Assessment Report, the admission procedures and policies for new students follow the National Regulation 48/2022.

There are three different ways by which students can be admitted to a Bachelor's programme at UGM:

1. National Entrance Selection of State Universities (SNBP), a national admission system, which is based on the academic performance during the high school (40 % of the students at UGM are admitted through this selection system).

2. Joint Entrance Selection of State Universities (SNBT): This national selection test is held every year for university candidates. It is a nationwide written test (subjects: mathematics, Bahasa Indonesia, English, physics, chemistry, biology, economics, history, sociology, and geography). It accounts for 30 % of the admitted students at UGM.

3. Independent Entrance Selection (Penelusuran Bibit Unggul, PBU): Students are either selected based on a computer based test (similar to SNBT) specifically held by UGM or on merits/social reasons. (30 % of the undergraduate students at UGM are admitted this way).

The annual intake quota of the BFAPT programme is 100 students, with a positive deviation to outbalance possible withdrawals. The number of applicants exceeds by far the number of available places. For example, in 2020/21, there were 5645 students applying for admission and only 142 new students were accepted. This is equivalent to an admission rate of only 2.5 %.

Table 4 shows the admission data for the BFAPT programme for the last academic years.

Academic Year	Capacity	Number of Prospective Students		Number of New Students		International Students	Total Active Students
		Applicants	Accepted	Regular	Transfer		
2020/2021	100	5645	142	133	0	0	457
2021/2022	100	2585	117	110	0	0	355
2022/2023	100	2869	117	108	0	0	413
2023/2024	100	3368	116	110	0	0	459
2024/2025	100	3096	126	123	0	0	441

Table 4: Applications and Admission to BFAPT programme Source: SAR UGM

The details of the application process at UGM and further information on admissions criteria and deadlines can be found on UGM's homepage and the Academic Guidelines, which are also published on the university's webpage.

The experts inquire of the programme coordinators, why there are so many students applying for studying at UGM. They learn that there are many high school graduates in Indonesia and UGM is one of the most prestigious universities in the country. Consequently, UGM is able to only accept the very best candidates. From their discussion with the students, the experts gain the impression that the admission system is very effective and only very motivated and high-performing candidates are admitted.

The admission process for the Master's and Doctoral programmes at UGM is designed to attract high-quality candidates from diverse academic and professional backgrounds. Applicants are evaluated based on their academic achievements, research potential, and alignment with the programme's objectives, to ensure that admitted students are well-prepared to pursue advanced studies and contribute to their respective scientific fields.

Admission requirements for the Master's programme at UGM vary for national and international applicants. National applicants must provide a previous education degree certificate and an academic transcript. Moreover, the applicant must meet a minimum Academic Potential Test (TPA) score of 500, provide proof of English proficiency with a TOEFL score of at least 450, and have a relevant academic undergraduate background. For

the Research track, applicants must submit a research proposal and evidence of previous publications. The schedule of admission, the requirements, and the procedures are published and can be accessed via UGM's homepage.

In cases where an applicant's educational background is not aligned with food science and technology, provisions are made through matriculation courses designed to equip students with the necessary foundational competencies. These courses are designed to ensure that students gain the essential knowledge needed to succeed in the MFST programme. This approach allows the MFST programme to accommodate a broader range of applicants while still preserving its high academic standards. The programme has an annual capacity of 60 students and the number of applicants usually exceeds the number of available places by a small margin. The following table show the number of applications and accepted students in the MFST programme:

Academic Year	Capacity	Applicants	Accepted	Registered Student		International Students	Total Active Students
				Regular Track	By research track		
2021/2022	60	56	48	43	5	0	97
2022/2023	60	87	57	57	0	0	119
2023/2024	60	109	69	50	1	0	136
2024/2025	60	74	51	46	0	2	115

Table 5: Applications and Admission to MFST programme Source: SAR UGM

Applicants for the MBME programme need to be graduated from medicine, public health, nursing, dentistry, veterinary medicine, life science, engineering, or pharmacy Bachelor's programmes with a minimum GPA of 3.00. The following table shows the number of accepted students.

	2020/2021 Odd	2020/2021 Even	2021/2022 Odd	2021/2022 Even	2022/2023 Odd	2022/2023 Even	2023/2024 Odd	2023/2024 Even	2024/2025 Odd	2024/2025 Even
Input	5	3		3	9	4	8	9	6	3
Reguler	5	3		3	6	4	5	8	6	2
Fast Track					2		2			
By Research					1		1	1		
International										1
Graduates				2	2		1	2	5	7

Table 6: Applications and Admission to MBME programme Source: SAR UGM

The experts discuss during the audit with the programme coordinators how the Master's programmes make sure that students with a different background have the same level of knowledge and skills. They learn that students who lack some competencies need to join the matriculation programme before they can enrol in the regular Master's programme.

This is certainly a useful procedure as the applicant often have a divers academic background from their Bachelor's education. If students lack certain skills or subject knowledge, a matriculation programme helps closing these gaps. However, the experts point out that the admission regulation of the MBME and MFST programme need make clear what competences are required from applicants and under what circumstances new students have to join the matriculation programme before starting with the regular Master's programme. By clearly stating the required competences and the conditions of the matriculation programme, the university ensures that all new students know what qualifications are required, how their application will be assessed, and under what conditions they are admitted directly or conditionally. Clear criteria prevent arbitrary decisions and increase trust in the admission process.

For the Doctoral programmes, general admission requirements include a minimum GPA of 3.25 from an accredited Master's Programme with at least a B rating, a TPA score of 550, and an English proficiency score equivalent to TOEFL ITP ≥ 500. Applicants must also provide a study permit or assignment letter from their employer (if applicable) and demonstrate previous scientific publication experience. Research track applicants must additionally provide evidence of at least two publications in international journals and submit a research proposal as required by Rector's Decree No. 18 of 2019.

The selection process consists of three stages. The first is conducted at the university level to verify supplementary documents. The second stage is managed by the study programme, which assesses academic qualifications, motivation, readiness, financial support, and the submitted supplementary documents, followed by an interview with the programme coordinators. The final stage involves a plenary meeting at the Graduate School to finalize admission decisions.

The admission process begins with online registration through the university's website, followed by document verification by the Directorate of Education and Teaching at UGM. Once the documents are validated, the applicant's information is forwarded to the study programme for an interview. In the interview, the applicant's research understanding, background knowledge, academic achievements, and economic capability is assessed. The final decision is made at a faculty-level meeting led by the Dean and then communicated to applicants through the UGM Directorate of Education and Teaching.

The Master's and Doctoral programmes usually allow conditional deferment for up to one year, primarily for applicants seeking scholarships. If registration is not completed within this period, the admission offer is cancelled.

Additionally, UGM offers a Fast-Track programme designed to provide an accelerated pathway for outstanding students. For undergraduate students aiming to continue to the

Master's programme and Master's students progressing to the Doctoral programme, the fast-track scheme allows them to start their graduate studies while completing their undergraduate or Master's studies. This integrated approach shortens the overall study duration, enhancing efficiency and encouraging high-achieving students to pursue advanced degrees.

The Master's and Doctoral programmes at UGM, accept new students every semester. Successful applicants must complete online registration, document verification, and tuition payment by the end of semester.

The interest in enrolling in the DBiotech programme has significantly increased, particularly since the onset of the COVID-19 pandemic. The global crisis brought by COVID-19 has heightened awareness of the crucial role biotechnology plays in addressing medical and public health challenges. This shift in perception is reflected in the growing interest in medical biotechnology. The data on student admissions clearly shows this trend. In 2018, the programme admitted only three students, followed by four students in 2019, and three students again in 2020. However, the numbers surged to 10 students in 2021, 14 in 2022, and 13 in 2023. The disparity between the number of accepted and enrolled students arises because prospective students are generally still seeking scholarships to fund their studies. This is crucial, as research in biotechnology demands substantial financial resources. Consequently, scholarships serve as vital support to ensure the continuity of studies and research, often becoming a strategic choice for students in biotechnology programmes. The following table show the number of applications and accepted students in the DBiotech programme:

Academic Year	Capacity	Applicants	Accepted	Registered Student		International Students	Total Active Students
				Regular Track	By research track		
2019/2020	20	11	4	4	0	0	33
2020/2021	25	4	3	3	0	0	32
2021/2022	25	27	18	11	0	0	40
2022/2023	35	25	19	14	0	0	52
2023/2024	35	20	19	13	0	0	60

Table 7: Applications and Admission to DBiotech programme Source: SAR UGM

As the programme coordinators explain, the rising interest in biotechnology is closely aligned with global market demand. Industries and governments worldwide are recognizing the need for advancements in biotechnology to address infectious diseases,

drug development, agricultural sustainability, and environmental protection. The pandemic has catalysed this demand, driving innovation and investment. Biotechnology is expected to continue its upward trajectory, with medical biotechnology, genomics, bioinformatics, vaccine development, and biopharmaceuticals leading the way. This growing market demand highlights the importance of producing highly skilled researchers and professionals.

The DES programme has a capacity of 15 new students per year, the number of newly admitted students is slightly below this level. The exact numbers for applications, admitted and newly enrolled students are shown in the following table:

Academic Year	Capacity	Applicants	Accepted	Registered Student		International Students	Total Active Students
				Regular Track	By research track		
2021/2022	15	12	12	12	0	0	31
2022/2023	15	12	11	10	0	0	30
2023/2024	15	31	30	12	3	0	43
2024/2025	15	22	17	7	0	0	44

Table 8: Applications and Admission to DES programme Source: SAR UGM

The DB programme is organised by the Faculty of Biology and requires a minimum GPA of 3.25 in the Master's degree, a TPA score of at least 500, and English proficiency (TOEFL ITP ≥ 450). Most applicants are professionals who are already employed or affiliated with research institutions, universities, or relevant companies.

Until the 2021/2022 academic year, the DB programme had a capacity of 25 students, this was increased to 35 in the academic year 2023/24. Due to the high demand, the programme expanded its capacity to 45 in 2024/2025 and received 46 applicants, all of whom were admitted. The latest academic year, 2025/2026, shows another expansion, with capacity increasing to 50 and applicants exceeding this number at 52. The latest expansion of the programme's capacity is due to a collaboration with the Indonesian government to provide scholarships for doctoral programmes for Indonesian lecturers (PDDI/Program Doktor Untuk Dosen Indonesia). All applicants were accepted, and 39 students registered, bringing the total of active students to 140, which quite high for a PhD programme. The acceptance rate remains high, with nearly all applicants being accepted each year, suggesting a strong applicant pool. However, the absence of international students in the last four academic years highlights an area for improvement. The difference between accepted applicants and registered students suggests that some students defer their admission. This could be due to various reasons such as personal circumstances,

financial issues, or the desire to start the programme at a more convenient time. The exact numbers are shown in the following table:

Academic Year	Capacity	Applicants	Accepted	Registered Student		International Students	Total Active Students
				Regular Track	By research track		
2021/2022	25	18	18	19	0	1	53
2022/2023	25	21	21	19	7	0	68
2023/2025	35	35	35	22	7	0	87
2024/2025	45	46	46	23	8	0	107
2025/2026	50	52	52	35	4	0	140

Table 9: Applications and Admission to DB programme Source: SAR UGM

To ensure that new Master's students have the same ability or level of knowledge, a matriculation programme is carried out before students can enrol in the regular Master's programme. The matriculation programme is designed to harmonise students' competencies and align students' abilities before entering the lecture period. This is necessary because the scientific background of new students is different as the come from various universities in Indonesia. The matriculation programme is held twenty times online for two hours each. The topics are adjusted according to the needs of the new students and to the courses to be studied.

In summary, the experts find the terms of admission to be binding and transparent. They confirm that the admission requirements support the students in achieving the intended learning outcomes

At UGM, Bachelor's, Master's, and PhD students have to pay tuition fees. The tuition fees for undergraduate students depend on the parents' income and range from 0 (level 1) to IDR 11.000.000 (612€) at the highest level 6. The tuition fees for Master's and Doctoral programmes are different for Indonesian students with and without a scholarship and are the highest for international students:

Master Food Science and Technology:	Regular IDR 13.000.000 (702€)
	With scholarship: IDR 17.000.000 (918€)
	International: IDR 25.000.000 (1351€)
Master Biomedical Engineering:	Regular IDR 10.000.000 (538€)
	With scholarship: IDR 11.000.000 (612€)

	International: IDR 29.000.000 (1560€)
PhD Biotechnology:	Regular IDR 15.000.000 (805€)
	With scholarship: IDR 25.000.000 (1351€)
	International: IDR 45.000.000 (2338€)
PhD Biological Science :	Regular IDR 15.000.000 (805€)
	With scholarship: IDR 20.000.000 (1039€)
	International: IDR 45.000.000 (2338€)
PhD Environmental Science:	Regular IDR 19.000.000 (1017€)
	With scholarship: IDR 31.000.000 (1660€)
	International: IDR 49.500.000 (2650€)

Due to the numerous scholarship opportunities offered to UGM, a significant proportion of students, particularly those in the Master's and Doctoral programmes, receive scholarships. These scholarships typically cover tuition fees and include additional funds to support living expenses.

Criterion 1.5 Workload and Credits

Evidence:

- Self-Assessment Report
- Module Handbooks
- Study Plans
- Academic Guidelines
- Discussions during the audit.

Preliminary assessment and analysis of the experts:

All degree programmes at UGM must follow the Indonesian credit system regulations. Each Indonesian credit unit (CSU) or Sistem Kredit Semester (SKS) is distributed between guided and independent learning activities, as well as between face-to-face activities, laboratory activities/practicum, and project and field practice. According to the National Standards for Higher Education (SNPT), the learning activities are lectures, responses and tutorials, seminars, and practicum.

For regular classes in the Bachelor's and Master's programmes, 1 CSU of academic load for the undergraduate programme is equivalent to 3 academic hours, which equals 170 minutes. This includes:

- 50 minutes of scheduled contact with the teaching staff in learning activities,
- 60 minutes of structured activities related to lectures, such as doing the assignments, writing papers, or studying literature,
- 60 minutes of independent activities outside the classroom to obtain a better understanding of the subject matters and to prepare academic assignments such as reading references.

For lab work, final project, fieldwork, and other similar activities, 1 CSU is equivalent to 170 to minutes a week of students' activities.

Type of activity	Definition of 1 CSU/week/semester	Duration (min)	TOTAL (min)
Classroom course	Classroom meeting	50	170
	Structured task	60	
	Independent work	60	
Practical course	Practical work	170	170
Seminar	Seminar meeting	100	170
	Independent work	70	

Table 10: Work Load Calculation Source: SAR UGM

According to the Self-Assessment Report, UGM uses a fixed conversion factor of 1.5 between CSU and ECTS points for Bachelor's programmes and of 1.8 for Master's and Doctoral programmes. The reasoning behind this calculation is that one CSU equals 170 minutes (2.83 hours). As the semester lasts for 16 weeks 2.83 x 16 = 45.28 hours per semester. As UGM calculates 30 hours of students' workload for one ECTS point in the Bachelor's programmes, this total workload is then divided by 30 to get the conversion factor: 45.28 / 30 = 1.5. For Master's and PhD programmes, UGM calculates 26 hours of students' workload for one ECTS point. The workload per semester is divided by 26 to get the conversion factor: 45.28 / 26 = 1.8.

To complete the degree programme in time, Bachelor students need to take on average of 18 CSU per semester excluding co-curricular contents. However, the regular schedule usually covers 20-21 CSU per semester to give more space in the last semesters for resits, or more electives. If a student is not satisfied with his GPA, she or he can repeat the classes,

but this will lead to a prolongation of the study time. The semester GPA determines the maximum number of credits students can take the following semester, with a maximum of 24 CSU if the GPA range is 3.50-4.00. Bachelor's students are required to attend their classes in accordance with established regulations. They must be present for at least 75% of theoretical courses and 100% of practical courses. If a student's attendance falls below these percentages, they are not allowed to attend the final examination. The maximum time to complete the academic program is 14 semesters.

The semester GPA determines the maximum number of credits Master's students can take the following semester, with a maximum of 18 CSU if the GPA range is 3.50-4.00. The Master's programmes can be completed within the standard period of study (2 years), and a maximum of 4 years.

The workload for theses and dissertation-related courses is calculated differently due to the independent nature of activities, such as laboratory or field work, data processing, and manuscript writing. These activities are conducted for approximately 8–10 hours per day, 5 days a week, over 16–22 weeks per semester, resulting in a higher ECTS workload compared to non-thesis/dissertation courses.

Students' feedback is gathered at the end of each semester through SIMASTER, which includes specific questions on the appropriateness of the course workload. The results are discussed in coordination meetings involving programme coordinators and teaching staff, either at the end of the semester or during planning for the next academic period. Each student's workload is monitored by the student's academic advisor to ensure it aligns with their academic progress.

The experts point out that there can be no fixed conversion rate between CSU and ECTS points. Therefore, the ECTS points need to be calculated separately for each course. This is necessary, because the time students need for self-studies is different for each course. Especially the courses with the high share of self-studies (Master's and Bachelor's thesis) show, that the students spend much more time on their final projects than is currently reflected in the awarded ECTS points. UGM should follow the ECTS Users' Guide to determine the students' total workload. As described in the ECTS Users' Guide, the estimation of students' workload should include all learning activities. This is the time students typically need to complete all learning activities (such as lectures, seminars, projects, practical work, self-study and examinations). In other words, a seminar and a lecture may require the same number of contact hours, but one may require significantly greater workload than the other because of differing amounts of independent preparation by students.

As workload is an estimation of the average time spent by students to achieve the expected learning outcomes, the actual time spent by an individual student may differ from this estimate. Individual students differ: some progress more quickly, while others progress more slowly. Therefore, the workload estimate should be based on the time an "average student" spends on self-studies and preparation for classes and exams. The initial estimation should then be verified via students' satisfaction questionnaires.

Since the workload of the students was only estimated by the programme coordinators, the experts expect UGM to verify the students' total workload and to adjust the awarded ECTS points for each course if necessary. This could e.g. be done by including a respective question in the satisfaction questionnaires. In any case, UGM must make sure that the actual workload of the students and the awarded ECTS credits correspond with each other and make that information transparent in the module descriptions and the study plans.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Self-Assessment Report
- Academic Guidelines
- Discussions during the audit.

Preliminary assessment and analysis of the experts:

UGM has the goal to support the transition from a teacher-centered to a student-oriented teaching method, in order to involve all students in the learning process and to develop their thinking and analytical skills. In addition, blended learning is introduced as a modern way of teaching. The use of e-learning elements in the learning process allows for class activity without physical attendance. At UGM, it is possible to use e-learning for a maximum of 30 % of the course. To provide support and guidance to the teachers in utilizing these instruments, all members of teaching staff attended workshops on blended learning. To facilitate the use of blended learning, UGM has developed a moodle-based e-learning system (eLok), which has been in use since 2018 as UGM's official e-learning platform. It offers recorded lectures, course materials, assignments, quizzes, exams, and discussion forums. The platform supports asynchronous learning and assignment submission and incorporates gamification elements to enhance student engagement. Blended learning can be conducted for the maximum of 30% of the course sessions.

The BFAPT programme makes use of several different educational methods for each course such as practical laboratory work, field studies, lectures, Community Service, and Bachelor's thesis.

During the classes, active and interactive teaching methods (e.g. lectures, discussions, reports, presentations, and group work) are applied. UGM wants to encourage the students to gain knowledge from different scientific areas and wants to introduce them to research activities. This should ultimately contribute to the transition from a teacher-centred to a student-centred learning approach.

In the Master's programmes, lectures, seminars, case-based studies, small group discussions, internships and independent academic research activities are conducted. Almost all courses include student-centred/active learning in the form of case-based lectures, small group discussion and presentations, as well as practice-based learning like internships. Presentations, case-studies, and seminars involve students individually or in groups to actively communicate their ideas by explaining or describing the analysis of case studies, reports, or other specific presentation topics systematically. This method is also used for disseminating students' research proposals and theses.

Problem and project-based learning and a student-centred teaching approach are applied in most of the advanced courses. These methods comprise several steps, which requires students to gather information, solve problems, make reports, and discuss and present the results. These teaching methods focus on analysing problems and acquiring the skills to draw conclusions based on evidence. In addition, students should learn to work together in a team, to design their learning goals, and to take responsibility for their implementation.

The Doctoral programmes employ a variety of teaching and didactic methods tailored to the advanced and specialized nature of the education. These methods aim to equip candidates with the knowledge, skills, and competencies necessary for independent research, critical analysis, and academic or professional excellence. This includes individualized mentorship, research seminars and workshops, coursework and advanced classes, and independent research.

In summary, the expert group judges the teaching methods and instruments to be suitable to support the students in achieving the intended learning outcomes. In addition, they confirm that the study concepts of all programmes comprise a variety of teaching and learning forms as well as practical parts that are adapted to the respective subject culture and study format. It actively involves students in the design of teaching and learning processes (student-centred teaching and learning).

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

The experts point out that they still recommend increasing the scope and scientific demand of the laboratory courses in the Bachelor's and master's programmes. This is not a question

of recalculation the students' workload but of the selection of the experiments and practical tasks. All students need to gain hands-on experience with core biological methods, not just theoretical understanding. A well-designed, rigorous laboratory curriculum ensures that graduates meet international professional and academic standards.

The experts understand that applicants who do not fully meet the minimum competencies may be required to undertake a matriculation programme before enrolling in a Master's programme. The experts emphasise that the admission regulation needs to make transparent what competences are required and under what circumstances applicants have to join the matriculation programme before starting with a Master's programme.

The experts point out that UGM needs to verify the students' total workload and not only estimate it. This could, for example, been done by directly asking the students during the satisfaction surveys.

The experts appreciate that UGM organises international summer courses and has established numerous international partnerships. However, the experts see room for improvement with respect to academic mobility and, thus, recommend increasing the students' academic mobility (incoming and outgoing) and encouraging Indonesian students to spend some time abroad during their studies.

The experts understand that most of the teaching materials (e.g. presentation slides and textbooks) are already provided in English. Moreover, presentations and final projects can also be delivered and written in English. These are useful measures but from the experts' point of view students' active English speaking and writing skills could be further improved. This could, for example, be achieved by teaching part of the subject-specific courses in English. This is especially relevant for the Master's and PhD programmes.

The experts appreciate that the BFAPT programme already offers a statistics course, which content will be updated to incorporate statistical analysis using R. With respect to bioinformatics, the experts are convinced that it would be useful for BFAPT students to have at least the opportunity to have this course as an elective, because modern food science is becoming highly data-driven and relies heavily on molecular-level understanding of ingredients and microbes.

The experts consider criterion 1 to be mostly fulfilled.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, Concept and Organisation

Evidence:

- Self-Assessment Report
- Module handbooks
- Academic Guidelines
- Academic Calendar
- Samples of student's work (projects, exams, and theses)
- Discussions during the audit.

Preliminary assessment and analysis of the experts:
According to the Self-Assessment Report, the students' academic performance is evaluated based on their attendance and participation in class, their laboratory works and reports, assignments, homework, presentations, mid-term exam, and the final exam at the end of each semester. The form and length of each exam is mentioned in the module descriptions that are available to the students via UGM's homepage and the digital platform SIMASTER.

The written exams can be multiple choice, quizzes, or essays. In addition, there are oral exams, especially for assessing the laboratory work. The students are informed about mid-term and final exams via the Academic Calendar. The final grade is the result of the different activities in the course (e.g. laboratory work, mid-term exam, the final exam, quizzes or other given assignments).

If students fail an exam, they have to repeat the entire module in the following semesters; it is not possible to retake just parts of the course or to just retake the final exam. The further details are described the Academic Guidelines. The faculty acknowledges that the short semester is not offered, with the reasoning being that this rule is in place to maintain student quality and ensure a proper understanding of the course material. However, the concern arises at the lack of remedial support for students. The experts point out that in their opinion it would be useful to introduce a remedial system so that students can repeat a failed exam. This way, the progression of studies could be accelerated as delays caused by a failed exam are minimised. Furthermore, the pressure on students is reduced if they know that an exam retake is possible.

The experts discuss with the students how many and what kind of exams they have to take each semester. They learn that for each course there is one mid-term exam and one final

exam in every semester. Usually, there are additional practical assignments or oral tests. The final grade is the sum of the sub-exams. The students appreciate that there are a several short exams instead of one big exam and confirm that they are well informed about the examination schedule, the examination form, and the rules for grading.

As stipulated in the Academic Guidelines, every Bachelor's and Master's student is required to do a final thesis. Prior to the actual research work, students need to prepare a research proposal, which is submitted to the Thesis Committee. Students are asked to find a suitable topic by discussing with the lecturers, developing own ideas, or joining a lecturer's research project. The student can propose the name of the thesis supervisor and submit the thesis proposal to the Thesis Committee. The Thesis Committee will review the proposal and decide about the supervisor.

After completing the work on the thesis students have to defend the thesis in front of the Thesis Defence Committee; it consists of a minimum of 3 lecturers (1 advisor and 2 examiners) and will determine whether the thesis qualifies for graduation. In the BFAPT programme there is only a closed oral presentation of the thesis (just in front of the Thesis Committee), whereas in the Master's programmes there is also a thesis seminar, which is open for all interested persons.

In the Master's programmes, the thesis workload is distributed across four semesters. In the first semester, students take the course "Research Methodology" to develop a research proposals covering design, analysis, and experimental planning. During the second semester, they refine their proposals in the course "Independent Study" under faculty supervision, culminating in a formal proposal defence. The third semester focuses on data collection and analysis, while the fourth semester emphasises progress monitoring and evaluation prior to the final thesis defence.

MFST students may undertake collaborative research at external institutions, including research centres and international universities, typically lasting three to twelve months. In terms of publication requirements, students in the Regular Track must have their thesis under review in a nationally accredited scientific journal or submitted to indexed international proceedings before the thesis defence takes place. Research Track students must have one accepted article in an indexed international journal or an accepted paper in an indexed international proceedings for thesis defence, and two accepted papers in indexed international proceedings for graduation.

The MBME programme has similar requirements. For students in the Regular Track, the thesis must be under review in a nationally accredited journal or submitted to indexed international proceedings for both thesis defence and graduation. For those in the Research Track, one accepted article in an indexed international journal or an accepted

paper in indexed international proceedings is required for thesis defence, while graduation requires acceptance of two such papers.

The Doctoral programmes under review (DBiotech, DES and DB) offer two dissertation pathways: the Regular Track and the Research Track, each with distinct expectations regarding workload and publication. The Research Track places a stronger emphasis on publication. Regular Track students are generally required to have at least one article under review or accepted in a nationally or internationally indexed journal before their dissertation defence. In contrast, Research Track students must meet higher publication requirements, typically involving one or more articles accepted in reputable international journals, reflecting the research-intensive nature of the track (see also Criterion D 1-4).

DBiotech students in the Regular Track must have at least one paper accepted in an international journal indexed in the reputable database for dissertation assessment. Students in the Research Track are required to have two papers accepted in international journal indexed in the reputable database for dissertation assessment.

In the DES programme, Regular Track students must publish at least one paper in an accredited international journal or two papers in international proceedings for both thesis defence and graduation. The Research Track requires two published papers in accredited international journals for both stages.

In the DB programme, Regular Track students are required to have one paper accepted in an accredited international journal for dissertation defence and published for graduation. For students in the Research Track, the requirement is two accepted papers for dissertation defence and two published papers for graduation in accredited international journals.

Students are required to attend a minimum of 75% of lectures and 100% of practical sessions to be allowed to take the final examination. Students with attendance below 75% will not be permitted to sit for the final exam. Student academic performance is evaluated through the Grade Point Average (GPA), which reflects the weighted average of grades obtained across all courses, with consideration of the number of credit units (CSU) assigned to each course. The GPA provides a cumulative measure of academic achievement and is used for academic progress monitoring and graduation eligibility. The grading follows the following table:

A	: 4	C+	: 2.25
A-	: 3.75	C	: 2
A/B	: 3.5	C-	: 1.75
B+	: 3.25	C/D	: 1.5
B	: 3	D+	: 1.25
B-	: 2.75	D	: 1
B/C	: 2.5	E	: 0

Table 11: Grading Scheme, Source: SAR UGM

For Bachelor's students, the GPA plays a critical role in determining the number of credits a student may take in the following semester. Students with a GPA below 1.5 may take up to 12 CSU; those with a GPA of 1.5–1.99 may take 15 CSU; 2.00–2.49 may take 18 CSU; 2.50–2.99 may take 21 CSU; and those with a GPA of 3.00 or higher may enrol in a maximum of 24 CSU. By the end of the second academic year (4th semester), undergraduate students are required to complete at least 30 CSU with a minimum cumulative GPA of 2.00. Failure to meet this requirement results in dismissal from the Programme. To qualify for graduation, students must have a minimum cumulative GPA of 2.00, with no grade of E, a maximum of 25% of credits with a grade of D, completion of at least 144 credits, and a total study duration not exceeding seven years.

To maintain satisfactory academic standing, Master's and Doctoral students must achieve a minimum cumulative GPA of 3.00 for the Regular Track and 3.25 for the by-Research Track. Students whose GPA falls below the required threshold at the end of the first semester will receive a written academic warning. A detailed procedure for evaluating student academic performance is outlined in the academic handbooks.

The experts also inspect a sample of examination papers and final theses and are overall satisfied with the general quality of the samples.

Students wishing to improve their grades may retake the course in a subsequent semester or academic year, when the module is offered, to ensure they meet the required competencies for graduation. The experts confirm that UGM provides support for students with special needs. This includes extended test time, alternative exam formats, and accessible facilities such as a dedicated lactation room, accessible toilets for students and staff with disabilities, and a full-day childcare facility to support those with young children. For students facing long-term illness or extraordinary personal circumstances, academic leave can be requested, allowing them to pause and later resume their studies without penalty.

In summary, the experts confirm that the different forms of examination used are competence-oriented and are suitable overall for verifying the achievement of the intended learning outcomes as specified in the respective module descriptions. The form of examination is determined individually for each course and published in the respective module description. The forms of examination are based on the main content of the modules and the level is appropriate for the respective degree programme.

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

The experts consider criterion 2 to be fulfilled.

3. Resources

Criterion 3.1 Staff and Staff Development

Evidence:

- Self-Assessment Report
- Staff handbooks
- Study plans
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the experts:

UGM is a semi-autonomous university and thus can independently manage its human resources, facilities, and infrastructure. Through this autonomy, UGM is empowered to develop institutional strategies, recruit and manage academic and administrative personnel, optimise the use of physical and digital infrastructure, and allocate resources in alignment with its academic priorities and performance targets.

At UGM, the staff members have different academic positions. There are professors, associate professors, assistant professors and lecturers/instructors. The academic position of each staff member is based on research activities, publications, academic education, supervision of students, and other supporting activities. For example, a full professor needs to hold a PhD degree. In addition, the responsibilities and tasks of a staff member with respect to teaching, research, and supervision depend on the academic position.

According to the Self-Assessment Report, the teaching staff for the BFAPT and MFST programmes has the following composition:

Position/education level	BFAPT	MFST
Professors (Ph.D. holder)	10	10
Associate Professors (Ph.D. holder)	6	6
Assistant Professors (Ph.D. holder)	7	7
Lecturer (Ph.D. holder)	9	9
Lecturer (Ph.D. candidate Or Master holder)	8	-
Total	**40**	**32**

Table 12: Teaching staff BFAPT and MFST, Source: SAR UGM

In the academic year 2024/2025, the BFAPT programme had a teacher to student ratio of 1:11 (40 teachers and 432 students), while the MFST programme achieved a ratio of 1:4.8 (32 teachers and 154 students). These ratios are well below the minimum requirements as stipulated by the National Accreditation Agency for Higher Education (BAN-PT) and by the Ministry of Research, Technology and Higher Education, which sets the maximum ratio at 1:60 for undergraduate and 1:20 for postgraduate programmes.

All members of the teaching staff are obliged to be involved in teaching, research, community service, and administration. As the experts learn during the audit, all teachers have a workload between 12 and 16 credits per semester (one credit equals 170 minutes of activities per week). This must include a minimum of three credits in education, while the remaining credits are allocated to research, community service, and administration However, the workload can be distributed differently between the three areas from teacher to teacher.

The teachers' workload in academic year 2023/34 in the BFAPT and MFST programmes is shown below:

No	Study Programme	Workload (Credits)				
		Lecture	Research	Community Service	Additional Task	Total
1	BFAPT	8.40	8.21	2.98	1.96	21.55
2	MFST	8.35	8.57	3.04	1.85	21.81

Table 13: Teachers' workload BFAPT and MFST, Source: SAR UGM

The Graduate School of UGM offers 25 study programmes, including 14 Master's programmes and 11 Doctoral programmes, covering various multidisciplinary fields (Science, Technology, Social Sciences, and Humanities). As a faculty with a multidisciplinary field, each study programme is supported by different teachers according to their respective areas of expertise. Additionally, there are administrative staff members

(laboratory staff, administration staff, finance staff, etc) who directly and indirectly assist the teaching activities in the Graduate School of UGM.

The teaching staff in the MBME programme comes from seven supporting faculties in UGM including Faculty of Veterinary Medicine, Faculty of Mathematics and Natural Science, Faculty of Pharmacy, Faculty of Dentistry, Faculty of Medicine, Public Health, and Nursing, Faculty of Biology, and Faculty of Engineering. The teachers' academic rank and their average workload in one semester are shown in the following table:

Category	Total Headcounts	Workload (SKS)			
		Education	Research	Community Service	Supporting Activities workload
Professors	4 (13.33%)	6.10	6.55	1.40	1.18
Associate Professors	12 (40%)	7.24	5.62	1.35	1.12
Assistant Professor	12 (40%)	6.78	5.34	1.78	1.67
Others	2 (6.67%)	5.50	6.77	1.24	1.83
Total	**30 (100%)**				

Table 14: Teaching staff and workload MBME, Source: SAR UGM

Teaching staff in the DBiotech programme come from 11 supporting faculties at UGM, including the Faculty of Agriculture, Faculty of Animal Science, Faculty of Veterinary Medicine, Faculty of Agricultural Technology, Faculty of Forestry, Faculty of Mathematics and Natural Sciences, Faculty of Pharmacy, Faculty of Dentistry, Faculty of Medicine, Public Health, and Nursing, Faculty of Biology, and Faculty of Engineering. Eighty percent of the teaching staff in the DBiotech programme are Full Professors, while the remaining 20% consist of Associate Professors and Assistant Professors. The total number of teaching staff in the DBiotech programme is 30; their academic positions and average workload per semester are detailed in the table below:

Category	Total Headcounts	Workload (SKS)			
		Education & Training	Research & Publication	Community Services	Supporting Services
Professors	23 (76.7%)	5.80	7.50	1.20	1.3
Associate Professors	6 (20%)	6.52	6.47	1.43	1.52
Assistant Professor	1 (3.3%)	7.67	5.77	1.22	1.31
Total	**30 (100%)**				

Table 15: Teaching staff and workload DBiotech, Source: SAR UGM

Regarding teachers' promotion, those who are public servants must follow the system regulated by the government. The teaching staff's promotion to a higher academic position is based on several factors, such as achievement in teaching, research (publications), and community service activities.

The DES programme is supported by 50 faculty members with diverse academic qualifications. The composition shows that 50% of the academic staff are Full Professors, reflecting a strong foundation of experienced scholars. Additionally, 46% are Associate Professors, while 4% are Assistant Professors.

The teaching staff of the DB programme consist of 23 Full Professors (62%), 10 Associate Professors (27%), and 4 Assistant Professors (11%). The high percentage of Full Professors is an advantage, enhancing the programme's competitiveness in research.

The largest portion of the teachers' workload (62.25%) is allocated to education, while research activities account for 23.46%. Additional duties and supporting roles constitute 8.26%, while community service activities represent 6.02%. The Faculty of Biology's supporting staff includes librarians, laboratory assistants, groundskeepers, and administrative personnel across divisions such as academics, student affairs, finance, and human resources. The current number of academic staff, with a teacher-to-student ratio of 1:20, adequately supports the programme's operational and academic needs.

The experts discuss with UGM's management, how new staff members are recruited. They learn that every year the faculties and departments announce their vacancies to UGM's management. Since UGM is semi-autonomous, they can decide themselves what staff members to hire. One way to recruit new teachers is to send promising Master's students from UGM abroad to complete their PhD and then to hire them as teachers when they are finished. In addition, part time lecturers are hired from the pharmaceutical industry to give lectures on specialised topics. UGM also hires graduates from other universities, but it is hard to attract them, because if they are young and promising, their own university will probably already have hired them. The experts notice positively that in the last three years, UGM only hires new teachers with a PhD degree.

In summary, the experts confirm that the composition, scientific orientation and qualification of the teaching staff are suitable for successfully implementing and sustaining the degree programmes.

The experts are impressed by the excellent and open-minded atmosphere among the students and the staff members. This atmosphere of understanding and support is one of the strong points of the degree programmes.

Staff Development

UGM encourages the training of its academic staff so it has developed a programme for improving the didactic abilities and teaching methods. According to the Self-Assessment Report, the Center for Innovation and Academic Studies (PIKA) is responsible for the development of lecturers' skills by offering courses to improve the didactic and professional skills and by assisting members of the teaching staff who are doing a PhD abroad. The academic staff development aims at providing the opportunities for the academic staff to improve their competences and updating their knowledge in their field of expertise.

Staff members in each department participate in various national and international professional organisations. Additionally, they engage in numerous scientific events, such as conferences, symposiums, workshops, and related activities, where they present their academic and research work and gain advanced insights from peers. These events also allow them to build and strengthen networks for future academic and research collaborations, which enrich their teaching. In some cases, these established networks have enabled faculty to invite guest lecturers connected to ongoing projects. Aligned with a commitment to continuous improvement, UGM regularly shares information on research opportunities, conference and workshop calls, training courses, and other relevant events. In addition, the university assigns certain faculty members to specialized training to advance their skills and professional performance.

Furthermore, Applied Approach (PEKERTI-AA) is a compulsory training for all staff members that focuses on advancing pedagogical knowledge. It is designed particularly for junior faculty members to introduce various teaching methods, learning strategies, preparation of assessments, class management, as well as syllabus and course content development. All teachers at UGM are obligated to attend the lecturer certification programme held by the Directorate General of Higher Education (Direktorat Jenderal Pendidikan Tinggi Ditjen, DIKTI). An official teaching certificate is issued after the faculty member has completed the certification process. In addition, the study programmes organise trainings to upgrade lecturers' pedagogical content knowledge on a regular basis.

The departments and faculties facilitate the staff development by enabling them to participate in national and international seminars and conferences. The staff exchange programme is supported by each faculty and funded by UGM and the Indonesian Ministry of Research, Technology and Higher Education. Sabbatical leave is also possible, but the length of the stay may vary from one month to one year; there are funds from the Indonesian Ministry of Research, Technology and Higher Education and UGM available for such stays.

UGM has the policy to increase the number of lecturers holding a doctoral degree by making an agreement with the newly entered lecturer bearing a master's degree to take doctorate within three years after employment. When they fail to fulfil this agreement, the university has the right to terminate the employment contract. Lecturer's performance is evaluated each semester by the faculty under the government assessment system. With this system, the performance is not only measured by the teaching activities, supervising activities, research activities but also the community service activities and other activities that are lecturers conduct to increase their competence and skills.

UGM encourages the training of its academic and technical staff, so it has developed a programme for improving the didactic abilities and teaching methods. One part of the capacity-building programme focuses on subject-specific skills (to keep up with current developments and trends in sciences), whereas other training courses are intended to further improve the teachers' didactic skills and to introduce new teaching methods (e.g. blended learning). The professional and scientific development of the staff members is coordinated by the Vice Dean for Finance, Administration and Human Resources and the Vice Dean for Academic and Student Affairs.

There are financial resources available for staff members to go abroad for a limited time and to take part at conferences or other events in order to stay up to date with the scientific development in their area of expertise. In addition, UGM wants to promote the process of internationalisation by hosting international scientific events, facilitating sabbatical leaves, and inviting international professors.

The experts discuss with the members of the teaching staff the opportunities to develop their personal skills and learn that the teachers are satisfied with the internal qualification programme at UGM, their opportunities to further improve their didactic abilities and to spend some time abroad to attend conferences, workshops or seminars; even a sabbatical leave is possible.

In summary, the experts confirm that UGM offers sufficient support mechanisms and opportunities for members of the teaching staff who wish to further develop their professional and teaching skills.

In addition, UGM encourage the academic staff members to join national and international seminars, symposia, and conferences. UGM provides rewards for lecturers whose articles are published in highly reputable international journals and provide training and funds for book writing and publishing. To this end, there is the Directorate of Research Scientific Publication and Journal Department (BPP), which provides support for article publication.

The experts discuss with the members of the teaching staff the opportunities to develop their personal skills and learn that the teachers are satisfied with the internal qualification programme at UGM.

Overall, the experts confirm that UGM offers sufficient support mechanisms and opportunities for members of the teaching staff who wish to further develop their professional and teaching skills.

Criterion 3.2 Student Support and Student Services

Evidence:

- Self-Assessment Report
- Discussions during the audit.

Preliminary assessment and analysis of the experts:
UGM offers a comprehensive advisory system for all undergraduate and Master's students. At the start of the first semester, every student is assigned to an academic advisor. Each academic advisor is a member of the academic staff and is responsible for several students from her or his classes. She or he is a student's first port of call for advice or support on academic or personal matters.

The role of the academic advisor is to help the students with the process of orientation during the first semesters, the introduction to academic life and the university's community, and to respond promptly to any questions. They also offer general academic advice, make suggestions regarding relevant careers and skills development and help if there are problems with other teachers. The students confirm during the discussion with the experts that they all have an academic advisor.

For doctoral students, guidance is coordinated by a promotor team, ensuring academic progress and research quality. This advisory system is managed by each study programme. Moreover, each study programme o provides structured academic guidance to help students stay on track with their coursework and thesis completion.

Career counselling at UGM is provided through the Directorate of Career and Alumni Relations (DKAUI), particularly via the Alumni Office, under the coordination of the Vice Chancellor for Student Affairs, Community Service, and Alumni. Services include career workshops, internships, job fairs, mentoring programmes, and individual consultations, helping students to explore career interests and to develop employability skills, in order to facilitate the transition into the labour market. UGM maintains numerous partnerships with industries, government bodies, and non-profit organisations to expand career

opportunities both nationally and internationally. Additionally, alumni centres (ugmcareer) are available to assist graduates in advancing their careers.

UGM organises a job fair twice a year, it is open to students, alumni and sometimes the public. The events are held at on campus with exhibition booths from many companies, sessions such as career talks, and even walk-in interviews. Besides booths, there are sessions where industry speakers talk about careers, what companies look for, and how to prepare. Some events include career counselling elements (helping attendees understand required skills, industry trends, career paths).

UGM has established a sub-Directorate of Alumni Affairs with its motto 'Stay in Touch, Be Well Connected'. All UGM alumni are members of an alumni union called KAGAMA (Keluarga Alumni Universitas Gadjah Mada/ Universitas Gadjah Mada Alumni Family).

Universitas Gadjah Mada (UGM) fosters entrepreneurship through some additional offers and programmes. For example, UGM’s Innovative Academy runs a Startup Incubation programme aimed at validating business ideas based on social or industrial problems and helping participants create market-ready products and sustainable business models. This program targets students, staff, alumni, and community members affiliated with UGM. Participants learn to validate ideas, develop products, and receive support to connect with the university’s business units for further collaboration.

In addition, UGM has the Technology Transfer Office (TTO), which is part of the Directorate of Business Development and Incubation. Its primary responsibilities include evaluating research and innovation results that have intellectual property protection to determine their feasibility for commercialization. The TTO coordinates research commercialization processes such as business analysis, selection of research suitable for market development, and recommending inventions with high commercial potential for further commercialization through spin-offs or startup licensing within the UGM Science Techno Park (STP). It also supports product incubation and business development programs, aiming to mature research ideas into products with economic value and social benefits. The TTO functions as a bridge between inventors and the market by providing intellectual property management support and facilitating connections to business partners and government entities.

Finally, UGM implements the Merdeka Entrepreneurship Program, a government-backed initiative under the Ministry of Research, Technology and Higher Education. This programme gives up to 400 students from across Indonesia an opportunity to develop entrepreneurial skills over a semester, earning up to 20 semester credit units (SKS).

In general, students stress that the teachers are open minded and communicate well with them and take their opinions and suggestions into account and changes are implemented if necessary.

All students at UGM have access to the digital academic portal (SIMASTER) which is integrated with the Registration Information System, the Academic Information System, the Library Information System, and the Scholarship Information System. The students' profiles (student history, study plan, academic transcript and grade point average/GPA, lecturer evaluation, course list) are available via SIMASTER.

There is also medical, social, and psychological support for students at UGM. Students have direct access to professional medical and counselling services through facilities like the Health Promotion Unit (HPU), the Gadjah Mada Medical Centre (GMC), and the Academic Hospital (RSA).

Finally, there are several student organizations at UGM; they include student's activity clubs, which are divided into arts, sports, religious and other non-curricular activities.

The experts notice the good and trustful relationship between the students and the teaching staff; there are enough resources available to provide individual assistance, advice and support for all students. The support system helps the students to achieve the intended learning outcomes and to complete their studies successfully and without delay. The students are well informed about the services available to them.

Criterion 3.3 Funds and equipment

Evidence:

- Self-Assessment Report
- Visitation of participating institutes and laboratories
- Discussions during the audit.

Preliminary assessment and analysis of the experts:

Basic funding of the degree programmes and the facilities is provided by the UGM and the respective faculties (Graduate School, Faculty of Biology, Faculty of Agricultural Technology). The financial sources are government funding which contribute to around 25 % to the total budget and which cover the salaries of all state employees. Around 40% of UGM's budget comes from students' tuition fees, while the rest is derived from, industry funding through cooperations, donations, and business revenues from different enterprises.

Additional funds for research activities can be provided by UGM or the Indonesian government (Bantuan Pendanaan Perguruan Tinggi Nasional, BPPTN), but the teachers have to apply for them. In addition, there are several cooperations with industrial partners.

The Faculty of Agricultural Technology, which offers the BFAPT and MFST programmes, prepares a budget plan with revenue and expenditure details each year. The funds are derived from the Indonesian government, tuition fees, collaboration fees as well as contributions from alumni and stakeholders. The Annual Work Plan and Budget (RKAT) plan is discussed and determined by the Dean and the Head of the Study Programme and documented in the annual activity budget plan. The Faculty Senate approves this budgeting plan and then adopts it as an official document of budgeting policy.

The BFAPT and MFST programme have five laboratories to support the practical work: (1) Food and Agricultural Product Chemistry and Biochemistry Laboratory, (2) Biotechnology Laboratory, (3) Food and Nutrition Laboratory (including Kitchen lab, Sensory evaluation laboratory, animal laboratory, and analytical laboratory), (4) Process Engineering Laboratory, and (5) Waste Management Laboratory. Each laboratory must have one academic staff member (with a doctoral degree in a relevant field of study) as head of the laboratory and at least one technician. The technician is responsible for managing all laboratory activities (laboratory practice and research for students) and maintaining all equipment to ensure the activities can be done. However, feedback from some alumni highlights occasional bottlenecks, particularly for specialized equipment such as the High-Performance Liquid Chromatography (HPLC) and freeze dryer, where queuing was reported. To address these challenges, the study programmes allocate an annual budget for the procurement of new equipment and consumables. In addition, there are several collaborations with other laboratories within the university, external universities (both domestic and international), industries, and research institutes. These collaborations are mostly used for carrying out research activities and the theses.

The three programmes offered by the Graduate School of UGM (MBME, DES, and DBiotech) are supported by a range of facilities located across the PAU Building (Pusat Antar Universitas / Inter-University Centre), the Graduate School Building, and other university buildings. The Graduate School Building offers a green and comfortable academic environment, with air-conditioned classrooms, discussion rooms, computer and internet access, teleconference capabilities, and a 225-seat auditorium suitable for seminars and workshops Key facilities include laboratories, classrooms, examination rooms, discussion rooms, a library, administrative offices, and parking areas. Three main laboratories are housed in the PAU Building: the CIMEDs Laboratory and Biochemical Laboratory on the first floor, the Microbiology Laboratory on the second floor, and the Genetic Engineering Laboratory on the third floor. These labs are equipped with advanced instruments such as

ultracentrifuges, refrigerated centrifuges, incubators, shaker incubators, –80°C freezers, liquid nitrogen tanks, laminar air flow cabinets, nanodrop spectrophotometers, ELISA readers, PCR machines (regular, gradient, qPCR), freeze dryers, fermenters, electrophoresis units (protein and DNA), water baths, GC, and other standard equipment. Additional laboratory access is available at the Faculty of Dentistry (Dental Learning Centre), the Faculty of Engineering, and the UGM Science Techno Park. Biomedical Engineering learning classrooms are located on the fourth floor of the Graduate School Building.

The DES programme also uses the facilities of the Faculty of Geography. Lectures are primarily conducted at the Faculty of Geography, which also houses a dedicated DES student workspace on the 3rd floor of Building B. This workspace includes lockers, a pantry, internal Wi-Fi, a smart TV, and a reading and discussion area, creating a conducive environment for study, coordination, and dissertation writing.

The Faculty of Biology, which offers the DB programme, has 12 laboratories and the Joint Research Facility (FALITMA) that has been established as a research support laboratory in the Faculty of Biology and focuses on analytical services in the field of molecular biology including DNA isolation, PCR, RNA isolation, RT-PCR, as well as protein isolation and SDS PAGE. Besides, in a particular DNA sequencing unit, next generation sequencing facilities for advanced molecular research are available for researchers and students.

In addition, there are several research facilities such as the Greenhouses, Arboretum, Sawit Sari and Karang Gayam Research Stations, Biomarine Science Research Centre and Technopark, Biology Museum, the Moeso Suryowinoto Indonesia Biodiversity Centre (MSIBC), and Integrated Genome Factory (IGF).

UGM also provides inclusive facilities for students with disabilities, including wheelchairs, lifts, guiding blocks, and dedicated parking areas, aligning with UGM's Health Promoting University (HPU) initiative.

In addition to faculty-level laboratories specifically designed to support research in their respective academic disciplines, UGM also offers university-level research facilities that are interdisciplinary in nature. These include shared laboratories such as the Integrated Research and Testing Laboratory (LPPT), Science Techno Park (STP), and various centralised research centres that provide advanced instrumentation and cross-faculty access. The LPPT was opened in 2021 and serves as the university's central facility for research and testing by providing comprehensive support to UGM academics—including lecturers, staff, and students—as well as external researchers and industry partners.

LPPT organises and facilitates a wide range of research activities, encompassing analytical methods in materials and metabolomics, in vitro and in vivo studies, molecular biology, immunological techniques, studies of Indonesian herbal plants, and histological analysis. In

addition, the laboratory offers testing and calibration services across various scientific disciplines, provides expertise and services for preclinical studies, including the development and maintenance of experimental animal models, which are crucial for pharmaceutical research.

Established in 2004 through the merger of four central laboratories, LPPT embodies UGM's commitment to a strategic, integrated, and interdisciplinary approach in research and testing. By providing state-of-the-art facilities and comprehensive services, LPPT plays a crucial role in advancing scientific research, fostering innovation, and supporting the academic community at UGM and beyond. It comprises four central laboratories: the Central Chemical and Physical Analysis Laboratory (LAKFIP) as UNIT 1, the Laboratory of Life Sciences (LIH) as UNIT 2, the Centre for Traditional Medicine Studies (PSOT) as UNIT 3, and the Experimental Animal Development Unit (UPHP) as UNIT 4.

During the audit, the expert group also visits the laboratories, the classrooms, and the library in order to assess the quality of infrastructure and technical equipment. They notice that in the teaching laboratories in the faculties there are no severe bottlenecks due to missing equipment or a lacking infrastructure. The basic technical equipment for teaching the students is available, although it is not always state of the art. Instruments for the practical courses are available in required numbers for the students. They are functional and well maintained even if they are older. The students confirm during the discussion with the experts that in general, they are satisfied with the available equipment only some instruments are outdated.

The experts confirm that the Integrated Laboratory for Research and Testing (LPPT) is very well equipped and offers the teachers and students access to modern and sophisticated instruments.

During the audit, the members of the teaching staff remark that the booking system for the advanced instruments in the centralised research labs should be improved to avoid bottlenecks and a prioritisation for important and urgent research projects should be possible. The experts support this suggestion because some experiments cannot wait due to, sample degradation, time-dependent biological or chemical processes, collaboration deadlines, or grant deliverables. Prioritisation prevents important projects from being stalled simply because all slots were booked earlier by lower-priority tasks. A booking system with prioritisation ensures that scarce, expensive instruments are used efficiently, fairly, safely, and strategically, supporting both the immediate needs of researchers and the long-term goals of UGM. An additional measure to avoid bottlenecks would be an analysis, which instruments are in high demand and to provide more devices in these areas.

The students express their satisfaction with the library and the available literature. The central library that offers direct access to international literature, scientific journals, and publications e.g. via SpringerLink. From the students' point of view, there is sufficient access to current international literature and databases and a remote access is possible.

The experts conclude that the available funds, the technical equipment, and the infrastructure (laboratories, library, seminar rooms etc.) comply with the requirements for sustaining the degree programmes. However, they want to emphasise that from their point of view it is highly counterproductive by the Ministry of Research, Technology and Higher Education to cut the university's budget. Reducing the university's budget moves UGM further away from its goal of becoming a leading research university in South East Asia. Achieving that vision requires investment, consistency, and strategic strengthening—not financial contraction. UGM's strategic goal of becoming a leading research university in South East Asia requires strong and sustained investment in advanced laboratories and equipment, research grants, postgraduate education, and international collaborations. Reducing the budget undermines these essential components and makes it impossible to reach or maintain competitive research standards. The experts are convinced that less financial resources will slow research productivity, lowering the very metrics UGM needs to improve to be a regional leader.

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

The experts thank UGM for explaining that UGM Marketplace is an online platform for ordering laboratory services at Universitas Gadjah Mada. Through this system, users can search for services, place orders, track their status, and receive service results. However, the UGM marketplace still needs to be improved to include services from all laboratories.

The experts consider criterion 3 to be mostly fulfilled.

4. Transparency and Documentation

Criterion 4.1 Module Descriptions

Evidence:

- Self-Assessment Report
- Module handbooks

- Bachelor in Food and Agricultural Product Technology webpage: https://s1tphp.tp.ugm.ac.id/en/
- Master in Food Science and Technology webpage: https://s2itp.tp.ugm.ac.id/en/
- Master in Biomedical Engineering webpage: https://bme.pasca.ugm.ac.id/en/
- Doctor in Biotechnology webpage: https://doktoralbioteknologi.pasca.ugm.ac.id/en/front-page/
- Doctor in Biological Sciences webpage: https://biologi.ugm.ac.id/en/doctoral-program/
- Doctor in Environmental Science webpage: https://lingkungan.pasca.ugm.ac.id/

Preliminary assessment and analysis of the experts:
The students, as all other stakeholders, have access to the module descriptions via UGM's homepage. After studying the module descriptions of all six programmes, the experts emphasise that all module descriptions must accurately reflect the content currently being taught for several key reasons related to academic quality, transparency, and accountability. Students and possible future students rely on module descriptions to understand what they will learn, how they will be assessed, and what skills or knowledge they will gain. Accurate descriptions allow students to make informed choices about their studies and prepare appropriately. International universities and external accreditation bodies use module descriptions to evaluate whether a programme meets academic standards and intended learning outcomes. If the descriptions are inaccurate, it undermines the credibility and accreditation of the programme. Additionally, the experts point out that the literature references in most module descriptions are outdated and should be replaced by current scientific references. To this end, all module descriptions should be regularly updated so that they correctly reflect the currently taught content. For example, the module descriptions should make transparent if AI is used and if so in what way.

In addition, the experts need to point out that the information about students' workload and awarded credits is not complete and the information on the required prerequisites as well as the literature references need to be updated. Students' total workload, including the time needed for self-studies, should be listed in hours per semester, and awarded ECTS points should be mentioned.

For this reason, the experts expect UGM to update the module descriptions for all six study programmes.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Self-Assessment Report
- Sample Transcript of Records
- Sample Diploma/Degree Certificate
- Sample Diploma Supplements

Preliminary assessment and analysis of the experts:
The experts confirm that students from all programmes under review receive a Degree Certificate and an Academic Transcript after graduation.

Along with these documents, the graduates receive a Diploma Supplement. It contains all necessary information about the degree program, including learning outcomes, acquired soft skills and student achievement in academic, co-curricular, extracurricular, or non-formal education.

Criterion 4.3 Relevant Rules

Evidence:

Self-Assessment Report

- Self-Assessment Report
- Bachelor in Food and Agricultural Product Technology webpage: https://s1tphp.tp.ugm.ac.id/en/
- Master in Food Science and Technology webpage: https://s2itp.tp.ugm.ac.id/en/
- Master in Biomedical Engineering webpage: https://bme.pasca.ugm.ac.id/en/
- Doctor in Biotechnology webpage: https://doktoralbioteknologi.pasca.ugm.ac.id/en/front-page/
- Doctor in Biological Sciences webpage: https://biologi.ugm.ac.id/en/doctoral-program/
- Doctor in Environmental Science webpage: https://lingkungan.pasca.ugm.ac.id/

Preliminary assessment and analysis of the experts:
The experts confirm that the rights and duties of both UGM and the students are clearly defined and binding. All rules and regulations are published on the university's website and hence available to all relevant stakeholders. In addition, the students receive all relevant course material in the language of the degree programmes at the beginning of each semester.

However, the information provided on the webpages of the different programmes is not complete. Each of the English webpages should include the essential information about the study programme such as profile, Programme Education Objectives(PEO), Programme Learning Outcomes (PLO), study plan as well as a link to the module descriptions. The English webpage of the MBME programme needs to include links to all module descriptions. The webpage of the DES programme needs to include the PLO as well as links to all module descriptions.

Finally, the study plans of the MBME, DES, and DB programme should include the ECTS points for each course.

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

Together with its statement on the draft report, UGM submits the updated module handbooks of all six study programmes. The experts confirm that the module descriptions have been updated and now include the required information about the actually taught content, the students' workload, the awarded ECTS points, prerequisites, and literature references. To this end, the experts are satisfied and see no need to issue a requirement with respect to the module descriptions. However, they point out that some lab courses include meaningless descriptions of the content (e.g. lab course physics: content: experiment E1, D3 and A2). This should be changed to the actual content of the experiments.

The experts confirm that UGM has included the awarded ECTS points for each course in the study plans.

The experts point out that the DES programme has not submitted any information on the updated homepage. The homepage of the MBME programme das been updated but several links to module descriptions are still missing.

The experts consider criterion 3 to be mostly fulfilled.

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

- Self-Assessment Report
- Academic Guidelines
- Sample students' questionnaire
- Results from tracer studies
- Discussions during the audit

Preliminary assessment and analysis of the experts:
The experts discuss the quality management system at UGM with the programme coordinators and the students. They learn that there is a continuous process in order to improve the quality of the degree programmes and it is carried out through internal (Sistem Penjaminan Mutu Internal/SPMI) and external evaluation (Sistem Penjaminan Mutu Eksternal/SPME). The quality assurance system at university level is conducted by the Quality Assurance Office (Satuan Penjaminan Mutu dan Reputasi Universitas, SPMRU), which is supported by the Quality Assurance Unit (UJM) at faculty level and the Semester Coordination Team (TKS) at department level.

UGM also employs tools such as SIMONI (Information and Evaluation System) and EDoM to monitor the quality of the learning process. SIMONI is a system developed to systematically monitor and evaluate academic performance and the overall effectiveness of the institution. By collecting data across various academic activities, SIMONI enables faculties and study programmes to identify performance gaps, track progress, and implement targeted improvements, thereby supporting data-driven decision-making in quality assurance.

Internal evaluation of the quality of the degree programmes is mainly provided through student and alumni surveys (annual tracer studies conducted by the university). The students give their feedback on the courses by filling out the questionnaire online (Evaluasi Dosen oleh Mahasiswa/EDoM). Giving feedback on the classes is compulsory for the students; otherwise, they cannot access their account on the digital platform SIMASTER. There are 12 categories in the questionnaire (e.g. schedule, course materials, workload, and motivation). The course surveys are held during the final exam week. A compilation of the students' feedback is sent to the respective lecturers. As the students point out during the discussion with the experts, there is also the possibility to give a direct and informal

feedback to the teacher. The faculties then conduct focus group discussions with students and teachers about the results of the satisfaction surveys and what follow-up actions will be taken. Additionally, focus group discussions are organised with different groups of stake holders (researchers, practitioners, industry and government representatives) on specific issues or topics. The aim is to identify challenges, needs and opportunities in areas such as curriculum review, educational financing, sustainability, or research-development.

The results of the questionnaires are documented in the course portfolios, which includes an action plan developed in response to the evaluations. This plan is implemented in the teaching methods of following semesters or academic year, ensuring a systematic approach to continuous improvement.

Before graduation, students are required to complete an exit survey evaluating the learning processes, academic and support services, and asked for suggestions for programme improvement. The survey covers several key areas, including academic learning, content quality, supervision, graduation barriers, extracurricular participation, student satisfaction, job readiness, and career services. Additionally, a tracer study is conducted one year after graduation to assess employment outcomes, job relevance, and graduate feedback for continuous curriculum enhancement.

In addition to the surveys, there is an annual Internal Quality Audit (AMI) in order to evaluate whether the general learning objectives have been achieved. AMI is held annually, assessing all aspects of the educational process conducted by the degree programme. The assessment is carried out by two auditors selected from outside the audited study programme and which are appointed by KJM. In the course of the AMI, lecturers, students, administrative staff, and degree programme management are interviewed by the auditors.

The results of internal quality assessments are evaluated on faculty level during the Management Review Meetings (RTM), attended by the dean, vice deans, heads of departments, heads of laboratories, degree programme managements and the Quality Assurance Unit. The RTM takes the final decision on all audit findings and initiates corrective actions if necessary.

During the audit, the experts learn that the results of the surveys are accessible by the students and the members of the teaching staff. If there is negative feedback, the Dean talks to the respective teacher, analyses the problem, and offers guidance. Furthermore, there is a complain box for the students that can be used for suggestions or criticism. The auditors gain the impression that the students' feedback is taken seriously by the faculties and changes are made if there is negative feedback.

External quality assessment of the degree programmes is provided by accreditation bodies such as the Board of National Accreditation Board for Higher Education (Badan Akreditasi Nasional Perguruan Tinggi/BAN-PT), LAM (*Lembaga Akreditasi Mandiri /* Independent Accreditation Institution) or international agencies such as ASIIN. SPME serves to validate the internal quality assurance and align it with national and international benchmarks.

The BFAPT programme received an A rating from BAN-PT. In 2020, the Ministry of Research, Technology and Higher Education revised the accreditation system using ISK (Accreditation Rating Conversion Supplement Instrument), an outcome-based accreditation to convert accreditation ratings from A to "Unggul" (excellent). The MFST programme is accredited with an “Excellent” rating by BAN-PT, valid from May 21, 2021, to May 21, 2026. The programme also held an “A” rating in the previous cycle (2016–2020).

The MBME programme has successfully completed the BAN-PT accreditation process and was officially approved as a study programme in 2020. In 2022, the Programme underwent its next accreditation by the BAN-PT, receiving a rating of "Very Good". It is valid for five years.

The DBiotech programme has already undergone several BAN-PT accreditations. It received an “A” grade in 2011 and maintained this rating in 2016. In 2021, the DBiotech programme attained an "Unggul" (Excellent) grade, valid from December 2021 to December 2026. The 2021 re-accreditation identified issues with extended study duration due to personal problems, the double degree programme, and the pandemic, which limited lab research. To address this, the dissertation research progress monitoring system will be improved with at least three monitoring sessions per year.

The Graduate School of UGM regularly conducts workshops to review and update the study programmes, focusing on curriculum design, course content, and research topics. For example, the DBiotech programme held a curriculum workshop in November 2024 with both internal (students, teaching staff) and external participants (experts, users, partners, alumni) from organizations like BRIN, PT Dermama Bioteknologi Laboratory, and Stem Cell and Cancer Research (SCCR) Indonesia. Several suggestions especially on how the study programme improves the engagement with industries were discussed. Additionally, in March 2024, the programme coordinators visited the Doctoral Academy at the University of Dundee, UK, to benchmark the DBiotech programme and gain insights for continuous academic improvement and international collaborations.

The DES programme maintains it high rating since 2020, when the programme was initially rated as “A”. The rating was then elevated to "Excellent" through the Interim Accreditation Instrument (ISK) process for the period of 2024–2025. Following a monitoring and

evaluation process, the DES programme successfully maintained its "Excellent" accreditation status for the period of 2025–2030.

The DB programme was awarded an “A” accreditation rating BAN-PT, valid from 2020 to 2025. In preparation for the expiration of this accreditation in November 2025, the programme has proactively initiated a re-accreditation process with the LAMSAMA (Lembaga Akreditasi Mandiri Sains Alam dan Ilmu Formal), the Independent Accreditation Agency responsible for natural and formal sciences in Indonesia. In May 2025, the programme earned the “Excellent” accreditation status.

In strengthening its academic position, the DB programme actively engages with KOBI (Konsorsium Biologi Indonesia), a national consortium of biology departments and study programmes across Indonesian universities. KOBI plays a strategic role in shaping biology education and research policies, harmonising curricula, and fostering academic collaboration. Through this affiliation, the programme benefits from shared expertise, access to national scientific networks, collaborative research opportunities, benchmarking, and professional development for faculty and students. Moreover, the DB programme conducts benchmarking studies with international partner universities, such as Universiteit Leiden, Australian National University, and the University of Leeds.

With respect to job perspectives and the graduates’ professional career, UGM regularly conducts tracer studies. In the BFAPT programme, most graduates (63.6%) find jobs in private companies. The details are shown in the following diagram:

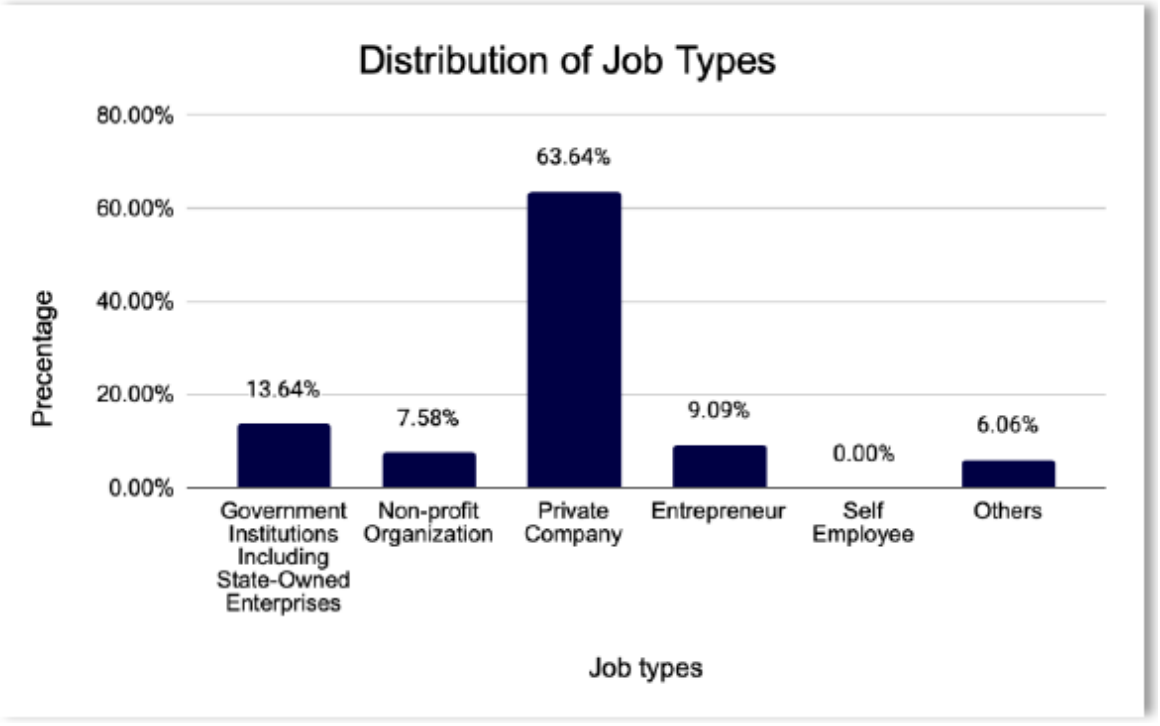


Diagram 5: Employment areas BFAPT, Source: SAR UGM

The career opportunities of the MFST graduates focus on jobs as higher education educators, food science researchers, quality assurance specialists, and entrepreneurs in the food industry. Some of students secure employment prior to graduation, often through pre-existing professional engagements or employer-sponsored study assignments. According to the latest period tracer study (2024), most of the graduates (67%) are employed in the public-sector as civil servants. The details are shown in the following diagram:

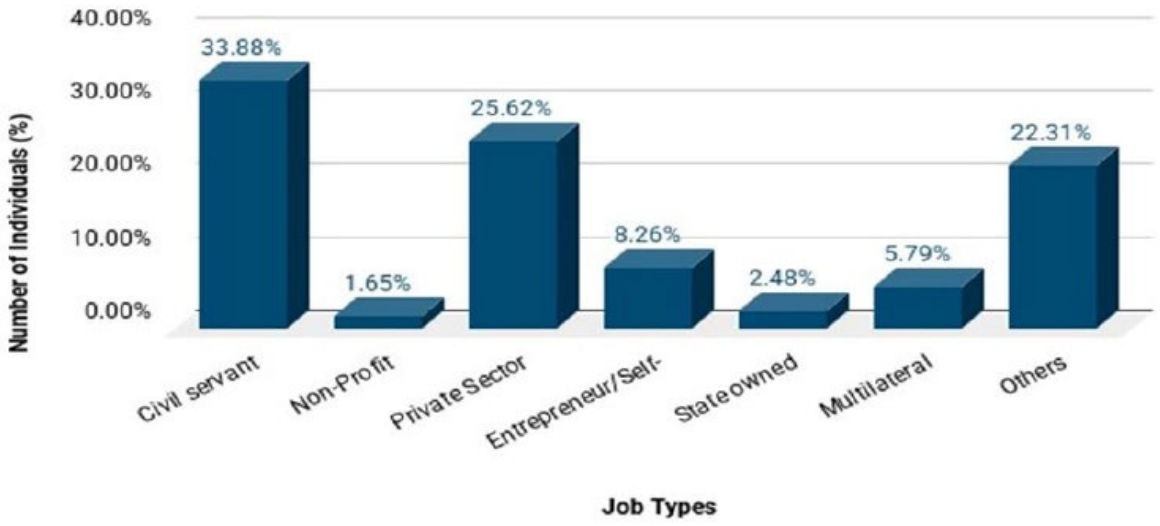


Diagram 6: Employment areas MFST, Source: SAR UGM

The job perspectives of BME graduates include, doctoral studies, bioengineering in higher education, bioengineering in the private and public sector, healthcare, researcher, analysts, and regulatory affairs. The numbers are shown in the following diagram:

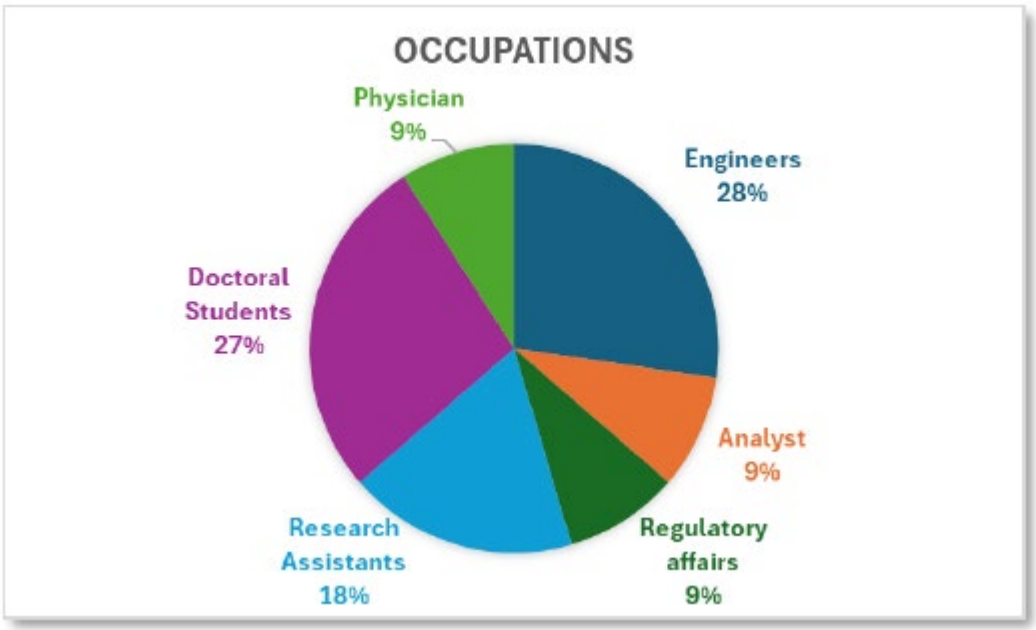


Diagram 7: Employment areas BME, Source: SAR UGM

Graduates of the DBiotech programme usually find adequate jobs either as researchers or teachers in higher education. Almost all DBiotech students have working experience, either through previous jobs or through their assignment to the programme by their employers. In the last five years, 50% of DBiotech graduates have found jobs in the government sector as researchers in offices such as National Research and Innovation Agency (Badan Riset dan Inovasi Nasional) while the 50% work as teachers in higher education.

The profile of the DES programme is aligned with the Indonesian Association of Environmental Science Programmes (PEPSILI). The programme is designed to produce environmental experts for various sectors, including higher education, governmental and public institutions, and research. A significant proportion of DES graduates (50%) are employed in the higher education. Additionally, a large number of graduates (33%) hold positions in the governmental sector, particularly as civil servants in agencies such as the National Research and Innovation Agency (BRIN) and other ministries responsible for environmental policies and regulations. Finally, some graduates work as researchers, consultants, or environmental specialists in the private sector.

DB graduates primarily find employment in the higher education sector (87%), while the rest work as researchers in the area of biology. Most of the DB students already have a job while pursuing their doctoral studies.

The experts discuss with the representatives of UGM's partners from public institutions and private companies if there are regular meetings with the partners on faculty level and how they are involved in further developing the degree programmes. They learn that some employers are invited to give their feedback on the content of the degree programme and are members of the curriculum committee. In addition, partners from the industry are invited to give lectures and to donate money for grants. As the experts consider the input of the employers to be very important for the further improvement of the degree programmes, they appreciate the existing culture of quality assurance with the involvement of all stakeholders in the quality assurance process.

In summary, the expert group confirms that the quality management system is suitable to identify weaknesses and to improve the degree programmes. All stakeholders are involved in the process.

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

The experts consider criterion 5 to be fulfilled.

D Additional Criteria for Structured Doctoral Programmes

Criterion D 1 Research

Evidence:

- Self-Assessment Report
- Samples of student dissertations and publications
- Discussions during the audit.

Preliminary assessment and analysis of the experts:

UGM has a strong focus on research activities and the ability and skill to develop science by conducting research are core learning outcomes of the Doctoral programmes. To support this goal, all three Doctoral programmes under review (DES, DBiotech, and DB) provide both a Regular Track and a Research Track. In both tracks, the dissertation represents a compilation of research that aims to address problems and generate innovation in the respective field of science. This includes research proposal, comprehensive examination, progress seminars, scientific publications, international dissemination through international conferences, and dissertation defence. Additionally, doctoral students are required to publish their work in reputable international journals.

In both the Regular and Research Tracks, students must begin their doctoral journey with careful research planning through the preparation of a proposal together with their promotor team. Research topics may come from the student's own initiative or from joining an established research group under the promotor that already has sufficient funding.

The research topics raised can come from students, teachers, and stakeholders such as industrial partners and governmental institutions. In addition to cooperation with domestic partners, research at UGM is also carried out through collaboration with various institutions abroad such as Tokyo University of Agriculture (NODAI, Japan), the University of Helsinki, Kansas University, Warwick University, and CIRAD France. These collaborations often involve students spending significant time overseas to conduct parts of their dissertation research.

Along the way, doctoral students are encouraged to develop proposals with their promotor team to apply for additional research grants. This process provides valuable experience in grant writing while strengthening the research itself. Dissemination of research results through international conferences and reputable scientific journals is an integral part of the programme, ensuring that students contribute to the global scientific community.

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

The experts consider criterion D1 to be fulfilled.

Criterion D 2 Duration and Credits

Evidence:

- Self-Assessment Report
- Academic Guideline
- Discussions during the audit.

Preliminary assessment and analysis of the experts:

The three Doctoral programmes under review encompass a minimum of 42 Indonesian credits (Satuan Kredit Semester, CSU). The expected study duration is six semesters (3 years) with student intake each semester. In regard to the maximum duration, UGM implements a limit of six years (10 semesters) in line with government regulations. An extension of the study period may be granted only under special circumstances.

The structure of the programme is determined by the student's chosen track: regular or research. However, the focus of the Doctoral programmes is on research. This is reflected in the curriculum distribution, which includes research-related activities, such as literature review, research proposal, publication, and dissertation.

The Regular Track of the DBiotech programme includes 8 CSU of compulsory courses and a minimum of 4 CSU of electives, supplemented by 34 CSU of dissertation research, resulting in a total of 46 CSU. In the Research Track, students need to complete 6 CSU of compulsory courses and 38 CSU of dissertation research, resulting in 46 credits. The number of awarded ECTS points differ from Research Track (179.8) and Regular Track (156.8), because in the research track more time for dissertation work, especially for the publications is required.

The typical study period of the DES programme is six semesters (three years) with 46 CSU (153,2 ECTS) for the Regular Track and 46 CSU (179,8 ECTS) for the Research Track.

The curriculum of the DB programme is also designed for graduation within six semesters (three years), with 46 CSU, corresponding to 181.6 ECTS points in the Regular Track and 184.4 ECTS in the Research Track.

Doctoral students confirm during the audit that the workload is manageable, allowing them to maintain a balance between studies and other commitments.

Most doctoral students are working as lecturers and have to carry out their teaching duties at their institutions, so they are not solely focused on their doctoral studies. Doctoral students also tend to conduct their research activities off campus, which makes direct monitoring more difficult for their supervisors.

All in all, based on the provided documentation and their discussions during the audit, the expert group attests that courses within the Doctoral programmes serve to achieve the intended academic qualification. Through the offered structure, students are able to individualise their doctoral journey.

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

The experts consider criterion D2 to be fulfilled.

Criterion D 3 Soft Skills and Mobility

Evidence:

- Self-Assessment Report
- List of cooperations
- Discussions during the audit.

Preliminary assessment and analysis of the experts:

Most of the Doctoral students already work as lecturers or practitioners at an institution. Therefore, the Doctoral programmes do not focus on providing career development training or professional development. Instead, the Doctoral programmes place greater emphasis on improving the quality of research activities by providing opportunities for joint projects with competent international researchers. To this end, many doctoral students have attended international seminars over the last five years, which has strengthened their academic networks and gave them valuable insights in current scientific research. Moreover, some doctoral students have conducted research activities abroad, including stays at the University of Kansas, Tokyo University of Agriculture (Tokyo NODAI), CIRAD (France), Wageningen University (Netherlands), Leiden University (Netherlands), University

of Greifswald (Germany), BOKU University (Austria), Humboldt-Universität zu Berlin, University of Edinburgh, NAIST (Japan), and the University of Helsinki.

Additionally, doctoral students are expected to participate at academic activities such as scientific training, article writing workshops, joint seminars, symposiums, guest lectures, and national and international workshops.

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

The experts consider criterion D3 to be fulfilled.

Criterion D 4 Supervision and Assessment

Evidence:

- Self-Assessment Report
- Academic Guideline
- Discussions during the audit.

Preliminary assessment and analysis of the experts:
Every doctoral student has at least two advisors (promoter and co-promoter). The promoter is a lecturer at UGM who holds a Doctorate degree and has at least two publications in international scientific journals. Co-promoters can come from institutions outside UGM. In the DB programme, there are two co-promoters.

The final scientific work in the Doctoral programmes is a dissertation. This work is based on research results and needs follow scientific methods and principles.

The Examiner Team is tasked with providing a comprehensive assessment of the student's academic performance, by submitting questions and rebuttals. Evaluations of the final scientific work are divided into research proposal seminar, scientific article writing, research results seminar, dissertation manuscript study, and promotion exam. On the scoring range of 0 – 100, the passing threshold is 70.

First, doctoral students have to pass the proposal exam, which includes mastery of research methodology in the field of science, mastery of material in the field of science both basic and specific, reasoning ability including abstraction ability, systematization ability, and formulation of thought results. Students who are declared passed with revisions are required to revise their proposals within a maximum of three months after the first

examination. Students, who do not pass, must repeat the proposal examination within six months after the first examination.

Afterwards, students are required to participate in the Seminar on Dissertation Research Results, which is conducted four times, namely at the end of each semester and starting at the end of the second semester. In the course of the seminar, students must present the results of their research in front of other doctoral students, the promoter team, and the Head of the Study Programme.

Students, who have completed their research projects, need to participate at the Dissertation Research Result Examination. The Dean, on the input of the Dissertation Committee, determines the Examiner Team consisting of a Chair of the Examining Team, the Promoter Team and three experts in the relevant field of science, with academic qualifications of Doctoral or equivalent.

Additionally, all Doctoral students, both regular and by research, are required to publish the results of their research activities. The publications can be in the form of review articles or in the form of articles originating from research results related to the dissertation topic and as the first author.

Next, the written thesis (dissertation manuscript) is assessed. The basis for assessing the feasibility of a dissertation includes material, reasoning ability, methodology, writing, and consistency of description. Finally, the Doctoral students need to take the Dissertation Closed Defense, which is part of the dissertation implementation. The examiners are called the Dissertation Closed Defense Team, which consists of nine people (Chairperson, the Promoter Team, the Dissertation Feasibility Assessment Team, and examiners outside the Assessment Team, one of which is from outside UGM).

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

The experts consider criterion D4 to be fulfilled.

Criterion D 5 Infrastructure

Evidence:

- Self-Assessment Report
- Visitation of the facilities
- Discussions during the audit

Preliminary assessment and analysis of the experts:
As highlighted by UGM in its Self-Assessment Report and during the audit, Doctoral students can draw from a range of facilities to support their timely graduation, including dedicated workspaces, research labs, as well as library access to books, journals, and anti-plagiarism checkers.

The experts visit the facilities provided for Doctoral students at UGM to evaluate the infrastructure and technical equipment. As indicated under criterion 3.2, the experts judge the available equipment and facilities as sufficient to support research activities. Moreover, the Integrated Laboratory for Research and Testing (LPPT) is very well equipped and offers the Doctoral students access to modern and sophisticated instruments. This way, the Doctoral students can conduct advanced research activities.

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

The experts consider criterion D5 to be fulfilled.

Criterion D 6 Funding

Evidence:

- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Funding for research is accessible through multiple sources, including the university itself, research grants from the Indonesian government, or external organisations, the latter drawing from UGM's network of industry partners. Further relevant aspects are discussed under criterion 3.2.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion D 6:

The experts consider criterion D6 to be fulfilled.

Criterion D 7 Quality Assurance

Evidence:

- Self-Assessment Report

- Statistical data for the Doctoral programme
- Discussions during the audit.

Preliminary assessment and analysis of the experts:
Based on the data provided in the self-assessment report, the experts confirm that UGM collects students' progression data, including average study time, drop-out rates and GPA averages for each doctoral student cohort.

The experts attest that academic guidelines are provided to the doctoral students to support their doctoral journey. Further relevant aspects are discussed under criterion 5 and criterion D 4.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion D 7:

The experts consider criterion D7 to be fulfilled.

E Additional Documents

Before preparing their final assessment, the experts ask for the following missing or unclear information together with the comment of UGM on the previous chapters of this report:

- none

F Comment of the Higher Education Institution (26.01.2026)

UGM provides the following statement for the

Bachelor's Degree Program Food and Agricultural Product Technology (BFAPT)
Master's Degree Program Food Science and Technology (MFST)
Master's Degree Program Biomedical Engineering (MBME)
Doctoral Program Biotechnology (DBiotech)
Doctoral Program Biological Sciences (DBS)
Doctoral Program Environmental Science (DES) :

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
A	**Summary, Room for improvement**			
1	**Point 1, Page 8** The module descriptions need to be updated with respect to students' total workload, the awarded ECTS points, prerequisites, literature references, and the actually taught content.	All programs	The module descriptions across the programmes have been updated in the respective module handbooks to ensure full transparency and alignment with ASIIN requirements. Information on awarded ECTS points, prerequisites, total workload, literature references (including both Indonesian and English sources), and taught content, which had previously been stated separately, is now clearly highlighted and harmonized. These updates ensure consistency between intended learning outcomes, teaching activities, and assessment methods.	

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
		BFAPT	In the doctoral Biotechnology programme, elective courses are designed to align with students' research interests, and several modules have been updated to incorporate the latest materials used by students, including revised references featuring recent sources and books authored by lecturers within the study programme.	Overview: https://docs.google.com/spreadsheets/d/1Q5bruUAJWMf1IMJJIVbXw4qObBtNbnn7ST_48wxC-Ts/edit?gid=0#gid=0 Module handbook: https://docs.google.com/document/d/1KaxgX0lbINaYNBduxxu9FLZInGIlFWouUqj-XAUZcGE/edit?usp=sharing
		D.Biotech		Academic Handbook: https://doktoralbioteknologi.pasca.ugm.ac.id/en/academic-handbook/ Module handbook: https://doktoralbioteknologi.pasca.ugm.ac.id/en/halaman-muka-english/course/
		DES		Module handbook: https://drive.google.com/file/d/1RUkl-qGeNpDziXRCovDKD6LfahrOvV_D/view?usp=drive_link
		MBME		Module handbook https://bme.pasca.ugm.ac.id/en/course-2/
		MFST		Examples of updated module descriptions: ● Advanced Food Analysis

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
				https://drive.google.com/file/d/1wQoAON-ZYddLQDhE8r228NjtNCuYLr-e/view?usp=drive_link • Research Methodology https://drive.google.com/file/d/1Is52nr-ojWR7WtTURUwbbahO_rr1hcRF/view?usp=drive_link • Scientific Communication II https://drive.google.com/file/d/10Y6naaxIXSyLFkrXfgJYKmgn_3jnfnnC/view?usp=drive_link Module handbook (full version): https://drive.google.com/file/d/1_7AtI9DRlgDXRV8JzRExa62gqb0wLoEH/view?usp=drive_link
2	**Point 2, Page 8** The scope and scientific demand of the laboratory courses in the Bachelor's and the Master's programmes should be increased.	BFAPT	The scope and workload of the practical courses in the Bachelor's programme have been recalculated based on the actual working hours, including laboratory courses and fieldwork. This is shown in the list of practical courses. The updated calculations have been reflected in all relevant documents, including the module handbook, website, Diploma Supplement (SKPI), and other related documents.	List of Practical Courses: https://docs.google.com/spreadsheets/d/1Q5bruUAJWMf1IMJJIVbXw4qObBtNbnn7ST_48wxC-Ts/edit?gid=1323374716#gid=1323374716 Module handbook: https://docs.google.com/document/d/1KaxgX0lbINaYNBduxxu9FLZInGIlFWouUqj-XAUZcGE/edit?usp=sharing Website:

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
				https://s1tphp.tp.ugm.ac.id/en/academic/curriculum-structure/ Diploma Supplement: https://drive.google.com/drive/folders/1CYNtg7FlYI48EVENjfcKOg1rLWAzWmo3?usp=drive_link
		MBME	The module descriptions have been updated to include practical activities, laboratory work & visits	Module handbook https://bme.pasca.ugm.ac.id/en/course-2/
		MFST	The Master Food Science and Technology programme, in fact, has strengthened the scientific depth and academic demand of laboratory-related learning activities, particularly at the Master's level. The **Experimental Nutrition Laboratory** is offered as a **stand-alone laboratory module**, providing structured experimental training in nutritional analysis, data collection, and data interpretation. Beyond this dedicated laboratory course, laboratory work is **integrated into several research-oriented modules**, including **Advanced Food Analysis**, **Research Methodology**, **Independent Study**, and the **Master's Thesis**. Within these modules, students are required to conduct **independent experimental work**, apply **advanced statistical and data analysis**, and perform **critical interpretation of results in relation to current scientific literature**. Laboratory activities therefore go beyond routine or demonstrative practices and emphasize	Module handbook: https://drive.google.com/file/d/1_7AtI9DRlgDXRV8JzRExa62gqb0wLoEH/view?usp=drive_link Practical work components: https://drive.google.com/file/d/1C4dGx0y5PhUB6VGPj7RtPQNXojH6c5-v/view?usp=drive_link

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
			methodological rigor, problem-solving, and research relevance.	
3	**Point 3, Page 8** The focus of the research projects in the area of Biomedical Engineering and Biotechnology should be sharpened.	MBME	MBME UGM supported by 7 faculties focuses its research activities on strategically defined areas that address national and global health challenges. Research conducted by staff and graduate students is structured to ensure scientific depth, interdisciplinary collaboration, and strong translational impact. The main research focus areas include: 1. Biomaterials and Biomedical Devices, 2. Biosensing and Diagnostic Technologies, 3. Artificial Intelligence 4. Medical Instrumentation and Healthcare Systems	https://bme.pasca.ugm.ac.id/en/690-2/
		D.Biotech	The Biotechnology Study Program serves as an interdisciplinary platform by integrating expertise from 11 supporting faculties. The program has established "Innovative Biotechnology to Address Climate Change Challenges" as its primary research theme, which provides strategic direction for student research activities. This theme mitigates fragmentation while facilitating interdisciplinary approaches across various biotechnology fields. Through five defined study interests, the program aligns individual research projects with its priorities, ensuring focused and impactful outcomes while preserving its multidisciplinary value.	https://doktoralbioteknologi.pasca.ugm.ac.id/en/research-focus/
4	**Point 4, Page 8** The experts doubt if it is useful to offer a research track in a Master's	MBME	A research track in a Master's programme aligned with National Higher Education Standard (Permendikbud no.3/2020) and Rector's Regulation of UGM No.18/2029	https://bme.pasca.ugm.ac.id/en/course-2/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	programme. Master's students should acquire the essential knowledge and skills that are expected from a Master's graduate and should not only concentrate on conducting research activities		about the implementation of research-based postgraduate Programs at UGM. The research based postgraduate program is implemented with the following objectives: to provide opportunities for the wider community and researchers from various institutions to pursue master's in order to develop the quantity and quality of research & publications, to produce master's researchers with strong research competencies who can contribute significantly to national development. Although the student is enrolled in a research track program, they are still required to take compulsory courses and 2 elective courses, so they do not focus solely on conducting research activities. In addition, they also gain additional knowledge from their supervisors.	
5	**Point 5, Page 8** The admission regulation should make clear what competences are required and under what circumstances students have to join the matriculation programme before starting with a Master's programme.	MBME	Prospective students are expected to have a relevant academic background and basic competencies in engineering mathematics, physics, and fundamental engineering principles. Prior exposure to biological systems, medical instrumentation, biomaterials, or related biomedical engineering fields is considered an advantage. Applicants should also possess basic competencies in research methodology, academic writing, and scholarly literacy, including the ability to read and understand scientific literature in English. Academic readiness and alignment of research interests are assessed through administrative selection and interviews. Applicants who do not fully meet the minimum competencies may be required to undertake a	https://bme.pasca.ugm.ac.id/en/686-2/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
			matriculation program. The student may take a matriculation program (bridging courses) because of: 1. a student from a vocational bachelor's or diploma 4 degree may have strong practical skills but limited exposure to theoretical foundations. 2. From the admission interview, the student may be identified as lacking critical thinking, analytical ability or understanding of core disciplinary concepts.	
6	**Point 6, Page 9** The awarded ECTS points need to comply with the students' total workload, which needs to be verified for each course (especially for the research work). It needs to be transparent how many hours of students' workload are required for one ECTS point.	BFAPT	ECTS credits are awarded based on verified total student workload for each course. In accordance with ECTS guidelines, one ECTS corresponds to 25–30 hours of student workload; for standardization and transparency, the program applies 30 hours per ECTS. For theory courses, one credit corresponds to a total workload of 45.33 hours per semester, consisting of 26.67 hours of lectures, 32 hours of structured assignments, and 32 hours of self-study. Based on this calculation, one theory credit is equivalent to approximately 1.5 ECTS. For practical courses, one credit reflects a total workload of 66 hours per semester. Each practical course meeting represents 5.5 hours of student workload, comprising 3 hours of hands-on laboratory practice and 2.5 hours for laboratory report preparation. The 12 meetings consist of 10 laboratory sessions, one discussion session, and one final exam. This results in an equivalent of approximately 2.2 ECTS per practical course credit. This workload-based calculation method is applied consistently and transparently across all courses,	Credits to ECTS Conversion: https://docs.google.com/spreadsheets/d/1Q5bruUAJWMf1IMJJIVbXw4qObBtNbnn7ST_48wxC-Ts/edit?gid=1333254377#gid=1333254377

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
			including research-based components, ensuring that awarded ECTS credits accurately reflect the students' total workload.	
		MFST	ECTS credits are assigned on the basis of the verified total student workload for each course. In accordance with the ECTS Users' Guide, one ECTS corresponds to 25-30 hours of workload. For reasons of standardisation and transparency, the programme applies a fixed value of 26 hours per ECTS. For theory courses, the total student workload is approximately 48 hours per semester, consisting of 120 minutes of lectures per week, 120 minutes of structured assignments per week, and 120 minutes of independent study per week, conducted over 16 weeks, including mid-term and final examinations. Based on this workload calculation, one theory credit is equivalent to approximately 1.85 ECTS. For the master's thesis, the workload is calculated as 8 hours per day, 5 days per week, over 22 weeks per semester, resulting in a total workload of 880 hours per semester, which is equivalent to 33.8 ECTS per semester. This workload-based calculation method is applied consistently and transparently across all courses, including research components, to ensure compliance with ECTS principles.	Conversion SCU to ECTS: https://drive.google.com/file/d/1zIz0rIAWKhbGzoOpDqzVTwjebsKC8GK8/view?usp=drive_link Module handbook: https://drive.google.com/file/d/1_7AtI9DRIgDXRV8JzRExa62gqb0wLoEH/view?usp=drive_link
		MBME	The student's workload in every course is displayed in the module description.	https://bme.pasca.ugm.ac.id/en/course-2/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
		D.Biotech	The calculation of ECTS credits in the doctoral biotechnology program has so far been in accordance with the students' workload. All calculations for converting credits semesters to ECTS are displayed in the module description of each course.	
7	**Point 7, Page 9** The study plans should include the ECTS points of each course.	BFAPT	The ECTS points for each course have been included in the study plans.	BFAPT Study Plan: https://drive.google.com/file/d/1YNNP3q2rYJnuULI-AbVN6t0AYzQXGFeN/view?usp=drive_link BFAPT Objective-Course Matrix: https://drive.google.com/file/d/1sLXrQKOVDQPDorYPSfm1IU70DioZLvu0/view?usp=drive_link
		MBME	The ECTS points for each course have been included in the study plans.	https://bme.pasca.ugm.ac.id/en/course-2/
8	**Point 8, Page 9** The English homepages of the degree programmes should include the essential information about the respective programme (profile, PEO, PLO, study plan, and link to the module descriptions)	BFAPT	The essential information about the respective programme (profile, PEO, PLO, study plan, and link to the module descriptions) have been included in the English homepage of BFAPT.	English homepage: https://s1tphp.tp.ugm.ac.id/en/home-en/ BFAPT Study Plan: https://drive.google.com/file/d/1YNNP3q2rYJnuULI-AbVN6t0AYzQXGFeN/view?usp=drive_link List of BFAPT Courses: https://docs.google.com/spreadsheets/d/1Q5bruUAJWMf1IMJJIVbXw4qObBtNbnn7ST_48wxC-Ts/edit?gid=0#gid=0
		MFST	The English webpage of the Master Food Science and Technology programme has been updated to include all	Profile, PEO: https://s2itp.tp.ugm.ac.id/en/profile/vision-

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
			essential information, namely programme profile, Programme Educational Objectives (PEO), Programme Learning Outcomes (PLO), study plan with ECTS, and direct links to the updated module descriptions.	and-mission/ PLO: https://s2itp.tp.ugm.ac.id/en/profile/program-learning-outcomes/ Study Plan: https://s2itp.tp.ugm.ac.id/en/academic/curriculum-structure/ Module descriptions: https://s2itp.tp.ugm.ac.id/en/academic/module-handbook-2/
		MBME	The English website has been updated to include PEO, PLO, study plan with ECTS and the updated module description	Graduate Profile, PEO, PLO: https://bme.pasca.ugm.ac.id/en/vision-mission-and-goals/ Courses & Module description: https://bme.pasca.ugm.ac.id/en/course-2/
		D.Biotech	The PLO for regular and by research has been revised and added into the English homepages of the D.Biotech. The PEO also has been added into the homepages of D.Biotech.	PLO Regular track view this link (https://doktoralbioteknologi.pasca.ugm.ac.id/en/program-learning-outcome-for-regular-program/) PLO By the research track in this link (https://doktoralbioteknologi.pasca.ugm.ac.id/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
				en/program-learning-outcome-for-degree-by-research-program/) PEO view this link https://doktoralbioteknologi.pasca.ugm.ac.id/en/program-educational-objectives/ Module/ course description view this link https://doktoralbioteknologi.pasca.ugm.ac.id/en/halaman-muka-english/course/ Study plans for both program view this link https://doktoralbioteknologi.pasca.ugm.ac.id/en/study-plan-for-regular-program/
		DBS	Essential information about the Doctoral Biology programme, including the programme profile, Programme Educational Objectives (PEOs), Programme Learning Outcomes (PLOs), study plan, and links to the module descriptions, has been publicly available and continuously accessible on the English homepage of the Faculty of Biology.	Profile: https://biologi.ugm.ac.id/en/doctoral-program/ PEO,PLO: https://biologi.ugm.ac.id/en/2024/12/30/vision-mission-objectives-targets-competencies-and-learning-outcomes/ Curriculum Of SPDB (Curriculum Map, module handbook) https://biologi.ugm.ac.id/en/curriculum-of-doktor-program/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
9	**Point 9, Page 9** Students' academic mobility (incoming and outgoing) is rather low. Indonesian students should be encouraged to spend some time abroad during their studies.	BFAPT	Currently, the Bachelor's programme is offered as a regular programme delivered in Bahasa Indonesia and is not an international undergraduate programme. However, we have initiated international collaborations to support student mobility for one to two semesters since 18 years ago. There are 15% outgoing students on average per year. These international collaboration initiatives for the regular programme exceed the standard requirements. This initiative has been undertaken in line with our vision to establish an International Undergraduate Programme (IUP) in the future.	Recap of BFAPT Student Mobility Activities: https://docs.google.com/document/d/1QuvNDMqz-qosCjle7wyggsE5pkZfsfql/edit?usp=drive_link&ouid=109504804285705638852&rtpof=true&sd=true
		MFST	The Master Food Science and Technology programme has established **multiple international partnerships** and actively promotes opportunities for **outgoing mobility**, including **double degree programmes, research-based thesis mobility, and short-term academic visits abroad**. To strengthen student participation, the programme systematically disseminates information on international mobility schemes, aligns mobility opportunities with thesis research and academic requirements, and encourages students to integrate mobility periods into their study plans. At the same time, the programme actively promotes itself at the international level and supports **incoming mobility** through collaboration agreements and scholarship opportunities. At faculty level, **international summer courses** are organised on a regular basis and attract participants from	List of MFST student mobility activities: https://drive.google.com/file/d/1NgJC_l8fNwUdDUsRppfSyiiVTJvetQV7/view?usp=drive_link List of academic mobility partner institutions: https://drive.google.com/file/d/1ImATUj_6x0lcEDhOlvP-rEoV-UQH1Amz/view?usp=drive_link

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
			various countries through **online, on-site, and hybrid formats**, thereby providing additional opportunities for both incoming and outgoing mobility. These combined measures reflect the programme's ongoing commitment to expanding international exposure and increasing students' participation in academic mobility during their Master's studies.	
		MBME	The initiative began with collaborations involving institutions in Austria, Taiwan, UK and France. This initiative aims to establish partnerships with overseas universities. Promotion to students needs to be strengthened. Another possible action is to provide links in the website about student mobility opportunities offered by the Office of International Affairs (OIA) UGM and other relevant institutions.	https://oia.ugm.ac.id/
		DBS	The Doctoral Biology programme actively fosters academic mobility. Several students have already participated in international programs, and double degree collaborations with prestigious universities have been successfully established, with some students having already graduated from these programs and others currently enrolled. In addition, the Faculty of Biology has appointed Adjunct Professors from international institutions, which is expected to further enhance academic mobility. Building on these achievements, the programme continues to expand international partnerships, provide scholarships for both outbound and	Student International Mobility: https://drive.google.com/file/d/1nqQ-lGLhGTQ5R5g7tlO8lRvI0KKZ-ljF/view?usp=drive_link https://biologi.ugm.ac.id/en/2025/10/14/ph-d-student-from-biology-ugm-conducted-joint-research-at-naturalis-biodiversity-center-hortus-botanicus-leiden-netherland/ https://biologi.ugm.ac.id/en/2025/09/26/ugm-double-degree-doctoral-student-from-faculty-

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
			inbound students, and promote research stays and academic exchanges, ensuring a sustainable and globally engaged future for its doctoral students	of-biology-wins-poster-prize-at-the-77th-annual-conference-of-the-german-society-for-hygiene-and-microbiology-dghm-2025/ https://biologi.ugm.ac.id/en/2024/11/18/the-faculty-of-biology-ugm-graduate-students-win-awards-at-the-asian-ornithological-conference-in-beijing-china/ Double Degree for SPDB: 1. Leiden University https://drive.google.com/file/d/1hm1UKgk1dvdcg1TeqfMK_q6V7w08p2xD/view?usp=sharing 2. BOKU University https://drive.google.com/file/d/1ceLk5yRsf3IbHhbA0UzRCuIfdWMwRjT1/view?usp=sharing 3. Griefswald University https://drive.google.com/file/d/189Kd_M-tv1oGFr_dVHLgn_KVu-EWU6Y5/viewusp=sharing Adjunct Professor of Faculty of Biology UGM: https://biologi.ugm.ac.id/en/adjunct-professor-2/

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10	**Point 10, Page 9** It would be useful to teach part of the subject-specific courses in English.	BFAPT	Some courses that have been delivered in English are seminars. Previously, several courses were mandated to be delivered in English; however, based on the evaluation results, students preferred the courses to be delivered in Bahasa Indonesia. Nevertheless, the teaching materials (e.g. presentation slides and textbooks) are already provided in English. Student presentations and final projects are also encouraged to be delivered and written in English. In the future, we plan to teach parts of subject-specific courses in English.	-
		MFST	In the Master Food Science and Technology programme, **English has already been substantially integrated into the teaching and learning process** as part of its internationalisation strategy. Currently, **approximately 98% of presentation materials are delivered in English**, and **around 90% of the recommended learning references consist of English-language scientific literature**. In addition, a number of Master's theses are written in English, and **about 85% of the scientific publications produced by students and academic staff are published in international English-language journals**. These practices demonstrate the program's ongoing commitment to strengthening students' academic English proficiency and supporting internationalization.	Examples of presentation materials (PPTs): https://drive.google.com/drive/folders/1IBw_AEGBJuYpuHk8hZx1ABzXrUDi08b0?usp=drive_link Examples of publications: https://drive.google.com/drive/folders/1-Or_gJ_JHXB8jigKD__LaJqi14V_dk1U?usp=drive_link
		MBME	The module handbook clearly states which courses are delivered in English and Indonesian (dual language) or	https://bme.pasca.ugm.ac.id/en/course-2/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
			only Indonesian.	
11	**Point 11, Page 9** The employers suggest improving Bachelor's and Master's students skills in problem solving e.g. through conducting project based case studies.	BFAPT	More than 85% of the Bachelor's courses are delivered using case-based or project-based learning methods with focus on problem solving. In addition, all student presentations are encouraged to be delivered in English.	List of courses applying case-based or project-based: https://docs.google.com/spreadsheets/d/1Q5bruUAJWMf1IMJJIVbXw4qObBtNbnn7ST_48wxC-Ts/edit?gid=1034223725#gid=1034223725
		MFST	The development of MFST students' problem-solving skills is systematically addressed in the MFST curriculum through the implementation of **project-based** and **case-based learning**. **Almost all courses apply these learning approaches**. Furthermore, students are trained in problem-solving through research-oriented learning, particularly during their thesis work, where they are required to identify, analyze, and propose solutions to real scientific and technological problems, which are critically reviewed by supervisors and examiners.	Example of module descriptions highlighting project-based case studies: • Advanced Food Analysis https://drive.google.com/file/d/1wQoAON-ZYddLQDhE8r228NjtNCuYLr-e/view?usp=drive_link Module handbook (full version): https://drive.google.com/file/d/1_7AtI9DRlgDXRV8JzRExa62gqb0wLoEH/view?usp=drive_link
		MBME	A project-based learning (PBL) grant for lecturers can be proposed next year to encourage all lecturers to adopt PBL in their courses. Nevertheless, several courses have already implemented PBL, as they are taught by lecturers from industry (PT ATMI, PT Solo Abadi, PT MAK).	https://bme.pasca.ugm.ac.id/en/course-2/
12	**Point 12, Page 9** The booking system for the	MBME	UGM Marketplace is an online platform for ordering laboratory services at Universitas Gadjah Mada. Through	https://market.ugm.ac.id/

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	advanced instruments in the centralised research labs should be improved to avoid bottlenecks and a prioritisation for important and urgent research projects should be possible		this system, users can search for services, place orders, track their status, and receive service results. However, the UGM marketplace still needs to be improved to include services from all laboratories.	
13	**Point 13, Page 9** Cutting the university's budget is counterproductive to UGM's goal of becoming a leading research university in South East Asia.	BFAPT	Strong and sustained investment in advanced laboratories and equipment, research grants (e.g. Kompetensi Doktor (Doctoral Competency Program), Academic Excellence, PRIME SteP, Joint Supervision Program by the Directorate of Global Partnership and Relations, Riset Kolaborasi Indonesia (Indonesia Collaborative Research), Rekognisi Tugas Akhir (Final Project Recognition), Research Assistance Program, Innovative and Synergistic Grants of the Faculty of Agricultural Technology, Research and Innovation for Advanced Indonesia (RIIM–BRIN), Bank Indonesia Research Grant, Ekspedisi Patriot of the Ministry of Transmigration, Yakkum Emergency Unit, RISPRO–LPDP, PT Berkat Kana Abadi, and the Yogyakarta Office of Agriculture and Food Security.), postgraduate education, international collaborations (e.g. Prince of Songkla University, Khon Kaen University, University of Borås, University of Copenhagen, Yamagata University), and industrial collaborations (e.g. Erista Garden, Kalbe Nutritionals, PT Mazaraat, PT Algaepark, Gasol Pertanian Organik, etc.) will be maintained to sustain and further enhance the research standards.	-

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		MFST	The university acknowledges the experts' concern regarding the potential negative impact of budget reductions on its strategic goal of becoming a leading research university in South East Asia. While overall budget constraints are influenced by external policy decisions, Universitas Gadjah Mada has implemented **mitigation strategies** to safeguard the quality of research infrastructure and academic activities. In this context, the university has successfully secured **competitive national funding for laboratory equipment acquisition**, amounting to **IDR 9,419,319,891 since 2024**, through the University Leading Applied Research Programme. This funding has been specifically allocated to strengthen core research facilities and to support advanced experimental and analytical work across faculties. At programme level, the Master Food Science and Technology programme benefits from **diversified funding sources**, including competitive national research grants, international collaboration projects (such as **Erasmus+, SEARCA–DAAD, and SATU Joint Research Scheme**), as well as industry partnerships. In addition, the programme has priority access to **centralised university research facilities and shared advanced laboratories**, ensuring that students can conduct high-quality research despite financial constraints. Furthermore, strategic resource planning, collaboration with external partners, and continuous investment in key	Overview of Diversified Funding Sources Supporting the Programme: https://drive.google.com/file/d/1omcOrZExehwAYJKCWiOS8Ggt5h6-bkny/view?usp=drive_link List of PUAPT Grant-Funded Equipment: https://drive.google.com/file/d/12u-2pjAQCO3pkEfQHx-DwUKec_WNasxo/view?usp=drive_link

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			research facilities are actively employed to maintain research capacity and long-term sustainability. These measures ensure that the intended learning outcomes of the Master Food Science and Technology programme can be achieved **without compromising academic quality or research standards**.	
1	**The Degree Program: Concept, Content & Implementation**			
	Criteria 1.1			
	Page 14, Paragraph 2 The PhD programme Biological Sciences (DBS) has the goal to prepare its graduates to address the challenges of the 21st century ranging from climate change and biodiversity loss to the need for sustainable biological innovation. In addition, students of the DBS programme should acquire social competences, such as abstraction ability, analytical thinking, capacity for teamwork, ability to communicate, international and intercultural experience, and are therefore prepared to take on leadership responsibilities	DBS	The Doctoral Programme in Biological Sciences (DBS) is designed to address major 21st-century challenges such as climate change, biodiversity loss, and sustainable biological innovation through independent, original, and research-intensive doctoral work in tropical biology and related fields. In line with EQF Level 8 descriptors, the programme also systematically develops analytical thinking, abstraction ability, teamwork, scientific communication, international and intercultural experience, thereby preparing graduates to assume leadership roles in academia, research institutions, and policy-relevant sectors.	PEO-PLO of SPDB: https://biologi.ugm.ac.id/en/2024/12/30/vision-mission-objectives-targets-competencies-and-learning-outcomes/

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	Page 15, Paragraph 3 …students of all programmes under review programmes should be capable of working autonomously as well as in a team-oriented manner and be able to conduct research activities. Furthermore, they should be able to solve subject-relevant problems, can present their results, have trained their analytical and logical abilities, and have an awareness of possible social and ethical effects of their actions. During the course of their studies, the students should acquire communicative and language skills and have developed a strategy for life-long learning	DBS	We fully endorse the expectations for students of the Doctoral Program in Biological Sciences. The programme actively employs coursework, laboratory and field research, collaborative projects, seminars, workshops, mentoring, and guest lectures, as well as opportunities to present research in English, to ensure that doctoral candidates develop independent and teamwork skills, conduct original research, solve complex biological problems, communicate findings effectively, and enhance analytical, critical thinking, ethical, and lifelong learning abilities.	Dissertation Research seminar: https://biologi.ugm.ac.id/en/2025/12/22/keeping-research-on-track-ugm-biology-phd-candidates-present-their-research-progress/ Guest Lecture: https://drive.google.com/file/d/119E-hZhUdXbMtbFvgHh2IgoGPZFwCKbH/view?usp=drive_link Workshops: https://biologi.ugm.ac.id/en/2025/10/24/faculty-of-biology-ugm-holds-workshop-investing-in-the-future-cultivating-excellence-in-science-and-biology-learning/ https://biologi.ugm.ac.id/en/2025/10/16/bioinformatics-workshop-icbs-2025-exploring-metagenome-analysis-and-phage-mining-with-an-expert-from-the-university-of-copenhagen/ https://biologi.ugm.ac.id/en/2025/06/25/understanding-how-plants-fight-back-the-plant-physiology-laboratory-of-ugms-faculty-of-biology-hosts-training-on-plant-stress-physiology-amid-climate-challenges/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
				International Seminars: https://biologi.ugm.ac.id/en/2025/10/20/the-9th-international-conference-on-biological-science-icbs-2025-unraveling-biodiversity-through-multi-omics-integration-from-genes-to-ecosystems/
	Criteria 1.3			
	Page 18, Paragraph 3 The experts point out that UGM should add courses in statistics and in bioinformatics to the curriculum of the BFAPT programme. Both topics are becoming increasingly important and it would be most useful to teach them with an applied focus, e.g. statistics based on R and bioinformatics based on Python.	BFAPT	Statistics Course (4.5 ECTS) has already been included in the programme, and the content will be updated to incorporate statistical analysis using R. Bioinformatics is not needed in the BFAPT programme. Students have gained practical experience in applying statistical methods through courses such as Sensory Evaluation, Quality Control, Industrial Internship I & II, and the Final Research Project.	-
	Page 27, Paragraph 2 The experts doubt if it is useful to offer a research track in a Master's programme. Master's students should acquire the essential knowledge and skills that are expected from a Master's graduate and should not only concentrate on	MFST	The programme acknowledges the experts' concern and agrees that Master's students should acquire essential and comprehensive competencies beyond a sole focus on research activities. The research track in Indonesian higher education was originally introduced to accommodate candidates with **prior research experience**, who were considered to already possess fundamental knowledge and	Module handbook: https://drive.google.com/file/d/1_7AtI9DRlgDXRV8JzRExa62gqb0wLoEH/view?usp=drive_link Thesis (Regular Track): Page 15 Thesis (By Research Track): Page 18

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	conducting research activities.		understanding of food science and technology and its recent developments (considered to have already acquired Program Learning Outcomes No. 3). In the past, such candidates were often affiliated with governmental research institutions or ministries, where early-career researchers were recruited directly after completing an undergraduate degree. Within this context, the research track in the Master Food Science and Technology programme was designed to provide flexibility for these candidates to pursue research-intensive studies while maintaining academic supervision and quality assurance. However, the programme recognizes that the national research ecosystem has evolved significantly. At present, most applicants to the Master's programme come from general undergraduate or professional backgrounds rather than from dedicated research institutions. In response to this development, the programme places its primary emphasis on the Regular Track, which ensures structured learning, methodological training, and the acquisition of broad Master-level competencies in line with international expectations. The research track remains formally defined in the curriculum framework to comply with university regulations and to accommodate exceptional cases of experienced researchers with an undergraduate background. In practice, however, this track is implemented selectively on a case-by-case basis and **only for those who have enough research experience in the food science and**	

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
			technology area.	
	Page 27, Paragraph 3 The experts suggest teaching part of the subject-specific courses in English. As English is the "lingua franca" in sciences, studying partly in English gives students the vocabulary and communication skills needed to work in global environments.	DES	The programme already uses English in learning activities, which also facilitates the student from foreign countries.	https://drive.google.com/drive/folders/1aWqDcPOvATdpbCbSBBunVe9LtXYKUano?usp=sharing
	Page 28, Paragraph 2 The experts see that UGM recognises that AI is not just a technical add-on but a fundamental tool for enhancing research output and educational innovation. However, the experts point out that the module descriptions should make transparent in what way AI is applied in the respective courses. Currently, the use and application of AI is mentioned in no module description	BFAPT	The use and application of AI in assignment is in accordance with department policy. This statement has also been incorporated into the module descriptions in each module handbook.	Module handbook: https://docs.google.com/document/d/1KaxgX0lbINaYNBduxxu9FLZInGIIFWouUqj-XAUZcGE/edit?usp=sharing AI Usage Policy: https://docs.google.com/document/d/1JBiN9Ixhwb8yy_sEgdcykDv4SF3DDIqq1exZNOMLXiA/edit?usp=sharing
		D.Biotech	A disclaimer has been included in both the module handbook and the program's website, clarifying that AI is employed solely for correcting grammar and language style, not for generating content, in the development of the module courses.	https://doktoralbioteknologi.pasca.ugm.ac.id/en/halaman-muka-english/course/
		DBS	Artificial intelligence (AI) is a relatively new and rapidly developing technology and was therefore not yet explicitly reflected in the existing module descriptions. However, the University has issued official AI guidance, and the	Workshop on AI Usage: https://biologi.ugm.ac.id/en/2024/08/09/enhancing-quality-education-the-faculty-of-biology-organized-workshop-on-artificial-

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
			Faculty is currently conducting a formal curriculum review and improvement cycle. Within this ongoing revision, the application of AI technology will be explicitly integrated and clearly described in the updated modules.	intelligence-ai-for-doctoral-program-curriculum-development/ AI Regulation and Policy in UGM: https://ai.ugm.ac.id/regulation-quick-win/
	Page 28, Last Paragraph The experts see that it would be very useful to sharpen the focus of the research projects in the area of **Biomedical Engineering** and **Biotechnology**.	MBME	MBME UGM supported by 7 faculties focuses its research activities on strategically defined areas that address national and global health challenges. Research conducted by staff and graduate students is structured to ensure scientific depth, interdisciplinary collaboration, and strong translational impact. The main research focus areas include: 1. Biomaterials and Biomedical Devices, 2. Biosensing and Diagnostic Technologies, 3. Artificial Intelligence 4. Medical Instrumentation and Healthcare Systems	https://bme.pasca.ugm.ac.id/en/690-2/
		D.Biotech	The Biotechnology Study Program serves as an interdisciplinary platform by integrating expertise from 11 supporting faculties. The program has established **"Innovative Biotechnology to Address Climate Change Challenges"** as its primary research theme, which provides strategic direction for student research activities. This theme mitigates fragmentation while facilitating interdisciplinary approaches across various biotechnology fields. Through five defined study interests, the program aligns individual research projects with its priorities, ensuring focused and impactful outcomes while preserving its multidisciplinary value.	https://doktoralbioteknologi.pasca.ugm.ac.id/en/research-focus/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	Page 29, Paragraph 2 The experts discuss with the programme coordinators if topics such as pharmaceutical biotechnology, immunology, or bioinformatics are discussed in the DBiotech programme. They learn that these areas are treated in the courses, however, the concrete content is not accurately described in the Module descriptions.The experts are satisfied with the actually taught content but emphasise that this needs to be correctly reflected in module descriptions	D.Biotech	Elective courses within the doctoral biotechnology program are typically designed to align with students' research interests. Several course modules have been updated to incorporate the latest materials utilized by students. Additionally, references have been revised to include the most recent sources, featuring books authored by lecturers within the Biotechnology study program.	https://doktoralbioteknologi.pasca.ugm.ac.id/en/halaman-muka-english/course/
	Page 35, Last paragraph The experts support these measures; however, they point out that students' academic mobility in the six study programmes under review is rather low (incoming and outgoing). It is especially low with respect to countries outside South-East Asia. For this reason, the	D.Biotech	To tackle this issue, we are strengthening international collaborations to establish structured mobility opportunities. Recently, we have been developing two double degree programs with Western Sydney University in Australia and the Nara Institute of Science and Technology (NAIST) in Japan. This year, in partnership with the University of Dundee, the study program received a Trans National Education (TNE) grant from the British Council, which in the future will provide the opportunity to facilitate student mobility and/or jointly develop courses,	MoU draft https://drive.google.com/drive/folders/15eTr-ZmAeakE5aF-BkQz95Af2vSAMCRN?usp=sharing

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	experts recommend encouraging students to spend some time abroad during their studies and to include courses that are at least partly taught in English in the curricula		particularly to support biotechnology and pharmaceutical-related courses.	
		DBS	The Doctoral Programme in Biological Sciences has strengthened measures to promote outgoing and incoming mobility, including sandwich programmes, joint supervision (co-tutelle), double degree opportunities, short-term research stays abroad, participation in international conferences and projects, and expanded use of English in seminars, proposal defenses, progress seminars, and selected courses. These initiatives are expected to enhance international engagement of students and support the achievement of the programme's learning outcomes.	MoU for Double Degree: 1. Leiden University https://drive.google.com/file/d/1hm1UKgk1dvdcg1TeqfMK_q6V7w08p2xD/view?usp=sharing 2. BOKU University https://drive.google.com/file/d/1ceLk5yRsf3IbHhbA0UzRCuIfdWMwRjT1/view?usp=sharing 3. Griefswald University https://drive.google.com/file/d/189Kd_M-tv1oGFr_dVHLgn_KVu-EWU6Y5/view?usp=sharing Research Collaboration: 1. Euglena. https://drive.google.com/file/d/1s1Gnmp42Fr-nT_9LhdMb1Sl-DuH_uQCv/view?usp=sharing 2. Australia National University https://drive.google.com/file/d/1DmeWVbM9cVJtN4Ib4tnjycSQmgCrATXY/view?usp=sharing Sample of Students international activity:

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
				https://biologi.ugm.ac.id/en/2025/10/14/ph-d-student-from-biology-ugm-conducted-joint-research-at-naturalis-biodiversity-center-hortus-botanicus-leiden-netherland/ https://biologi.ugm.ac.id/en/2025/09/26/ugm-double-degree-doctoral-student-from-faculty-of-biology-wins-poster-prize-at-the-77th-annual-conference-of-the-german-society-for-hygiene-and-microbiology-dghm-2025/ https://biologi.ugm.ac.id/en/2024/12/11/the-doctor-in-biology-study-program-of-biology-ugm-partners-with-naist-japan-for-a-research-internship-in-metabolomics/ https://biologi.ugm.ac.id/en/2024/11/18/the-faculty-of-biology-ugm-graduate-students-win-awards-at-the-asian-ornithological-conference-in-beijing-china/ Sample of Course taught in english: https://biologi.ugm.ac.id/en/2025/12/22/keeping-research-on-track-ugm-biology-phd-candidates-present-their-research-progress/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	Page 39, First Paragraph The admission regulations of the MBME and MFST programme need to make clear what competences are required from applicants and under what circumstances new students have to join the matriculation programme before starting with the regular Master's programme. By clearly stating the required competences and the conditions of the matriculation programme, the university ensures that all new students know what qualifications are required, how their application will be assessed, and under what conditions they are admitted directly or conditionally. Clear criteria prevent arbitrary decisions and increase trust in the admission process.	MBME	Prospective students are expected to have a relevant academic background and basic competencies in engineering mathematics, physics, and fundamental engineering principles. Prior exposure to biological systems, medical instrumentation, biomaterials, or related biomedical engineering fields is considered an advantage. Applicants should also possess basic competencies in research methodology, academic writing, and scholarly literacy, including the ability to read and understand scientific literature in English. Academic readiness and alignment of research interests are assessed through administrative selection and interviews. Applicants who do not fully meet the minimum competencies may be required to undertake a matriculation program. The student should join the matriculation program (bridging course) before starting the program, based on academic evaluation: 1. The student from a vocational bachelor's may have strong practical skills but limited exposure to theoretical foundations. 2. The student may be identified as lacking critical thinking, analytical ability or understanding of core disciplinary concepts, during admission process 3. Applicants whose undergraduate field of study is not fully aligned with the program	https://bme.pasca.ugm.ac.id/en/686-2/
	Criteria 1.4			
	Page 39, Paragraph 1 The admission regulation should make clear what competences are	MFST	The admission regulations of the Master Food Science and Technology programme clearly define the **required entry competences** based on four core academic pillars:	Student admission page: https://s2itp.tp.ugm.ac.id/en/student-affairs/admission/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	required and under what circumstances students have to join the matriculation programme before starting with a Master's programme.		**food chemistry, food microbiology, human nutrition, and food engineering**. Applicants are expected to demonstrate adequate foundational knowledge in these areas to ensure their readiness for advanced coursework and research at the Master's level. When an applicant's prior academic background does not sufficiently cover one or more of these core competences, participation in a **matriculation programme** is mandatory before entering the regular Master's curriculum. The matriculation programme is designed to **harmonize students' foundational knowledge in line with the learning outcomes of the Bachelor Food and Agricultural Product Technology programme**, ensuring that all admitted students start the Master's programme with a comparable academic baseline and are able to successfully achieve the intended learning outcomes.	
	Criteria 1.5			
	Page 45, Paragraph 5 There can be no fixed conversion rate between CSU and ECTS points… the actual workload must be verified.	MFST	The programme has recalculated and documented the student workload for each course individually, following the ECTS Users' Guide. The workload estimations now include all learning activities (contact hours, structured assignments, independent study, projects, and examinations). The verification of workload is supported through student feedback collected via end-of-semester evaluations (EDoM), ensuring that awarded ECTS points reflect the actual workload of an average student.	Conversion SCU to ECTS: https://drive.google.com/file/d/1zIz0rlAWKhbGzoOpDqzVTwjebsKC8GK8/view?usp=drive_link Student workload survey: https://drive.google.com/file/d/1D7drseSV0VrqB9M23d0BTOZbnMZEfvaC/view?usp=drive_link

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
				Module handbook: https://drive.google.com/file/d/1_7AtI9DRIgDXRV8JzRExa62gqb0wLoEH/view?usp=drive_link
	Page 47, Paragraph 2 UGM must make sure that the actual workload of the students and the awarded ECTS credits correspond with each other and make that information transparent in the module descriptions and the study plans.	D.Biotech	The calculation of ECTS credits in the doctoral biotechnology program has so far been in accordance with the students' workload. All calculations for converting credits semesters to ECTS are displayed in the module description of each course.	
		DES	DES conducted a student and alumni survey to collect data on the amount of time students spend each day on their studies, and the results were consistent with the established student workload as defined in the module handbook.	SCU to ECTS Conversion: https://drive.google.com/file/d/1-PDDDvw0Z9wZstlmqUnBbmYtTrnbYUN_/view?usp=drive_link Student Workload Survey: https://drive.google.com/drive/folders/17QPUVMFUQXIpcfQpOLVBTfghY_G4zhAc?usp=sharing Module Handbook: https://drive.google.com/file/d/1RUkl-qGeNpDziXRCovDKD6LfahrOvV_D/view?usp=drive_link

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
		DBS	The doctoral workload is verified through structured milestones including proposal defense, progress monitoring, publications, and dissertation defense. ECTS allocation for dissertation research reflects verified independent research workload.	SCU to ECTS Conversion: https://drive.google.com/file/d/1UBXEtaFfKz_9MCaYseTZoLQt54kDK0wn/view?usp=sharing
2	**2. Exam: System, Concept, and Organisation**			
	Page 48, Paragraph 3 However, the concern arises at the lack of remedial support for students. The experts point out that in their **opinion** it would be useful to **introduce a remedial system so that students can repeat a failed exam**. This way, the progression of studies could be accelerated as delays caused by a failed exam are minimised. Furthermore, the pressure on students is reduced if they know that an exam retake is possible.	BFAPT	The program would like to clarify that a formal remedial examination system has not been implemented because the final examination represents only a limited proportion of the overall course assessment. Student performance is evaluated through multiple assessment components, including assignments (individual and/or group assignments), quizzes, mid-term examinations, and final examinations, each contributing proportionally to the final grade. As a result, the likelihood of students failing a course solely due to one examination is relatively low. Nevertheless, the program acknowledges the experts' recommendation and will consider the introduction of additional academic support mechanisms, such as targeted academic guidance or alternative assessment opportunities, for students who are at risk of failing, in alignment with institutional regulations and the continuous improvement framework.	-
		D.Biotech	The Doctoral Program in Biotechnology does not implement remedial examinations for regular courses, per	

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
			Universitas Gadjah Mada regulations. The programme emphasises continuous formative evaluation through assessments and academic discussions. Given the case-based nature of doctoral learning, students' progress is monitored continuously, allowing academic difficulties to be addressed early, reducing the need for formal remedial exams. Regarding closed dissertation examination, students proceed only after passing rigorous dissertation assessment to ensure quality standards are met. If a student fails the closed examination, a retake is possible after completing required revisions, per university regulations. This mechanism ensures academic standards while providing students opportunity to complete studies timely.	
3	**3. Resources**			
	Criterion 3.3 Funds and equipment		-	
	Page 61, Paragraph 3 However, feedback from some alumni highlights occasional bottlenecks, particularly for specialized equipment such as the High-Performance Liquid Chromatography (HPLC) and freeze dryer, where queuing was reported.	BFAPT	Feedback from alumni, most of whom graduated a long time ago, has been followed up by allocating an annual budget for the procurement of new equipment and consumables. In addition, several collaborations have been established with other laboratories within the university, external universities (both domestic and international), industries, and research institutes. These collaborations are primarily utilized for conducting research activities and supervising undergraduate theses.	-

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	Page 63, Last Paragraph During the audit, the members of the **teaching staff remark** that the **booking system** for the advanced instruments in the centralised research labs **should be improved to avoid bottlenecks** and a **prioritisation for important** and **urgent research projects** should be possible.	D.Biotech	Gadjah Mada University has highly advanced and comprehensive laboratory facilities, such as those in the Integrated Research and Testing Laboratory (LPPT), as well as learning centers located across six faculties that support the doctoral program in biotechnology. The university has identified the difficulties in booking equipment distributed across many faculties and has developed a new, integrated system for use throughout UGM (market.ugm.ac.id). The equipment usage system is still under development, but the facility is already featured on the website. It is expected that next year, this system can be utilized by students at Gadjah Mada University.  	https://market.ugm.ac.id/
4	**4. Transparency and Documentation**			
	Criterion 4.1 Module Descriptions			

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	Page 65, Paragraph 1 - After studying the module descriptions of all six programmes, the experts emphasise that all module descriptions must accurately reflect the content currently being taught for several key reasons related to academic quality, transparency, and accountability. - Additionally, the experts point out that the literature references in most module descriptions are outdated and should be replaced by current scientific references. - For example, the module descriptions should make transparent if AI is used and if so in what way. - In addition, the experts need to point out that the information about students' workload and awarded credits is not complete and the information on the required prerequisites as well as the literature references need to be updated. Students' total workload, including the time needed for self-studies, should be listed in hours per	D.Biotech	Elective courses within the doctoral biotechnology program are typically designed to align with students' research interests. Several course modules have been updated to incorporate the latest materials utilized by students. Additionally, references have been revised to include the most recent sources, featuring books authored by lecturers within the Biotechnology study program. AI is generally used to assist in translating from Indonesian to English and also to improve grammar. This has been stated at the end of the website section on courses and in the preface of the module handbook. Information regarding the workload that students will receive after completing the course can be found in the module handbook, the study transcript on SIMaster, as well as the diploma supplement.	Module Handbook update: https://doktoralbioteknologi.pasca.ugm.ac.id/en/halaman-muka-english/course/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	semester, and awarded ECTS points should be mentioned. - For this reason, the experts expect UGM to update the module descriptions for all six study programmes.			
	Page 65, Paragraph 1 The experts emphasise that all module descriptions must accurately reflect the content currently being taught for several key reasons related to academic quality, transparency, and accountability. the literature references in most module descriptions are outdated and should be replaced by current scientific references. All module descriptions should be regularly updated so that they correctly reflect the currently taught content. For example, the module descriptions should make transparent if AI is used and if so in what way. Currently, the use and application of AI is mentioned in no module description.	DES	The module handbook has been revised and guidelines for using Generative AI in academic writing are already provided.	https://drive.google.com/drive/folders/1LcMQ8iwXN4HL51EF-Oa8CmUcMVA_eI67?usp=sharing
		MFST	The programme acknowledges the experts' comment regarding the transparency of AI usage in module descriptions. In response, the use of **artificial intelligence has now been explicitly integrated into relevant module descriptions, with a clear explanation of if and how AI is applied**. AI is consistently positioned as a **supporting tool**, for example in **literature management, data processing, chemometric analysis, and scientific writing support**. The revised descriptions explicitly state that AI-assisted tools are applied **under academic supervision and in accordance with ethical guidelines**, and that their use does **not replace students' scientific reasoning, analytical judgement, or methodological responsibility**.	Revised module descriptions highlighting AI-assisted learning components: ● Advanced Food Analysis https://drive.google.com/file/d/1wQoAON-ZYddLQDhE8r228NjtNCuYLr-e/view?usp=drive_link ● Research Methodology https://drive.google.com/file/d/1Is52nr-ojWR7WtTURUwbbahO_rr1hcRF/view?usp=drive_link ● Scientific Communication II https://drive.google.com/file/d/10Y6naaxIXSyLFkrXfgJYKmgn_3jnfnnC/view?usp=drive_link Module handbook (full version): https://drive.google.com/file/d/1_7AtI9DRlgDXRV8JzRExa62gqb0wLoEH/view?usp=drive_link

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	Page 65, Paragraph 1 To this end, all module descriptions should be regularly updated so that they correctly reflect the currently taught content.	DBS	To ensure that all module descriptions accurately reflect the currently taught content, the Doctoral Programme in Biological Sciences has conducted dedicated workshops for the systematic revision and updating of the module handbook, involving academic staff and programme coordinators. As an outcome, module contents, learning outcomes, assessment methods, and workload descriptions have been aligned with actual teaching practices and integrated into the programme's internal quality assurance and continuous improvement cycle.	https://biologi.ugm.ac.id/en/2025/12/11/academic-workshop-2025-strengthening-academic-governance-learning-innovation-and-research-commercialization/
	Page 65, Paragraph 2 The experts need to point out that the information about students' workload and awarded credits is not complete and the information on the required prerequisites as well as the literature references need to be updated. Students' total workload, including the time needed for self-studies, should be listed in hours per semester, and awarded ECTS points should be mentioned.	DES	Module handbook has been revised by providing students' workload and awarded credits	https://drive.google.com/file/d/1RUkl-qGeNpDziXRCovDKD6LfahrOvV_D/view?usp=sharing
	Criterion 4.3 Relevant Rules		-	
	Page 66, Last Paragraph The information provided on **the webpages of the different**	D.Biotech	Response similar to **Point 8, Page 9**	

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	programmes is not complete. Each of the English webpages should include the essential information about the study programme such as profile, Programme Education Objectives(PEO), Programme Learning Outcomes (PLO), study plan as well as a link to the module descriptions			
	Page 67, Paragraph 2-3 The information provided on the webpages of the different programmes is not complete. The webpage of the DES programme needs to include the Programme Learning Outcomes (PLO) as well as links to all module descriptions. The study plans of the DES should include the ECTS points for each course.	DES	Website is already updated	https://lingkungan.pasca.ugm.ac.id/en/doctoral-lectures/
	Page 68, Paragraph 1 The English webpage of the MBME programme needs to include links to all module descriptions. The webpage of the DES programme needs to include the PLO as well as links to all	MBME	The study plan and module handbook has been updated	https://bme.pasca.ugm.ac.id/en/course-2/
		DBS	The study plan of the SP-DB, including the ECTS points for each course, is fully available on the programme's official website, ensuring transparency and accessibility for students and stakeholders.	https://biologi.ugm.ac.id/en/curriculum-of-doktor-program/ Integrated Course Structure:

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
	module descriptions. Finally, the study plans of the MBME, DES, and DB programme should include the ECTS points for each course.			https://drive.google.com/file/d/1tKYMReJQ72TT9YupfxoF77JeUTBcf60Y/view?usp=drive_link
D	**Additional Criteria for Structured Doctoral Programmes**			
	Criterion D 2 Duration and Credits			
	Page 75, Paragraph 7 Most doctoral students are working as lecturers and have to carry out their teaching duties at their institutions, so they are not solely focused on their doctoral studies. Doctoral students also tend to conduct their research activities off campus, which makes direct monitoring more difficult for their supervisors	D.Biotech	In the Biotechnology program, the issue of students being preoccupied with teaching responsibilities at their home institutions does not arise. This is because 80% of doctoral candidates in biotechnology are university lecturers who are pursuing advanced studies through scholarships, such as the Indonesian Education Scholarship (BPI) or the Indonesia Endowment Fund for Education Agency (LPDP). With their status as study leave recipients, they are relieved of all lecturer duties, including teaching, research, and community service. Consequently, biotechnology students can focus on their dissertations at UGM.	
		DBS	The Doctoral Programme in Biological Sciences (DBS) has implemented a structured and scheduled monitoring system to ensure continuous supervision and timely study progress, despite many doctoral candidates being employed as lecturers and conducting research off campus. Progress is monitored through regular	The latest monitoring: https://biologi.ugm.ac.id/en/2025/12/22/keeping-research-on-track-ugm-biology-phd-candidates-present-their-research-progress/

No	Comments from ASIIN Experts (Section, Page, Paragraph)	Program	Explanation from the University to Clarify the ASIIN Comments	Related/Additional Evidence (Link/File)
			supervisory meetings, mandatory progress seminars, and study-programme-level progress reports reviewed by both promotors and the study programme. As a mitigation measure, early identification of delayed progress triggers academic interventions, including intensified supervision, revision of research timelines, and formal follow-up at programme level to prevent study delays.	

G Summary: Expert recommendations (16.02.2026)

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

Degree Programme	ASIIN Seal	Subject-specific label	Maximum duration of accreditation
Ba Food and Agricultural Product Technology	With requirements for one year	-	30.09.2031
Ma Food Science and Technology	With requirements for one year	-	30.09.2031
Ma Biomedical Engineering	With requirements for one year	-	30.09.2031
PhD Biotechnology	With requirements for one year	-	30.09.2031
PhD Biological Sciences	With requirements for one year	-	30.09.2031
PhD Environmental Science	With requirements for one year	-	30.09.2031

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Verify the students' total workload for each course and award the ECTS points accordingly. It needs to be transparent how many hours of students' workload are required for one ECTS point.

For the Master’s programmes

A 2. (ASIIN 1.4) The admission regulation needs to make transparent what competences are required and under what circumstances applicants have to join the matriculation programme before starting with a Master's programme.

For the Doctor Environmental Science

A 3. (ASIIN 4.3) The English homepage of the degree programme needs to include the essential information about the respective programme such as profile, intended learning outcomes, study plan, and a link to the module descriptions of all courses.

For the Master Biomedical Engineering

A 4. (ASIIN 4.3) The English homepage of the degree programme needs to include links to the module descriptions of all courses.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to increase the students' academic mobility (incoming and outgoing) and to encourage Indonesian students to spend some time abroad during their studies.

E 2. (ASIIN 1.3) It is recommended to teach part of the subject-specific courses in English.

E 3. (ASIIN 1.3, 4.1) It is recommended to make transparent how AI is applied in the different modules.

E 4. ASIIN (3.3) It is recommended to improve the booking system for the advanced instruments in the centralised research labs to avoid bottlenecks and a prioritisation for important and urgent research projects should be possible.

E 5. (ASIIN 4.2) It is recommended to include the ECTS points of each course in the study plans.

For the Bachelor's and the Master's programmes

E 6. (ASIIN 1.3) It is recommended to improve Bachelor's and Master's students skills in problem solving e.g. through project based case studies.

E 7. (ASIIN 1.3) It is recommended to increase the scope and scientific demand of the laboratory courses.

For the Bachelor's programme

E 8. (ASIIN 1.3) It is recommended to offer a course in bioinformatics, which should be taught on an applied level (e.g. based on python).

H Comment of the Technical Committees (16.03.2026)

Technical Committee 05 – Material Sciences, Physical Technologies (12.03.2026)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee does not propose any changes to the suggested requirements and recommendations and agrees with the experts' proposal.

The Technical Committee 05 – Materials Science, Physical Technologies recommends the award of the seals as follows:

Degree Programme	ASIIN Seal	Subject-specific label	Maximum duration of accreditation
Ma Biomedical Engineering	With requirements for one year	-	30.09.2031

Technical Committee 08 – Agriculture, Nutritional Sciences and Landscape Architecture (03.03.2026)

Assessment and analysis for the award of the ASIIN seal:

The accreditation procedure went very well overall and was evaluated positively by the expert group. Of the six study programmes in this cluster, only two fall within the remit of the Academic Committee 08, meaning that only two of the proposed requirements are being reviewed. These are considered sensible and appropriate, and the Technical Committee endorses the experts' decision without any changes. However, for the sake of consistency with regard to the wording of the ASIIN criteria, it is proposed that the term "course" be replaced by "module" in each instance.

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

Degree Programme	ASIIN Seal	Subject-specific label	Maximum duration of accreditation
Ba Food and Agricultural Product Technology	With requirements for one year	-	30.09.2031
Ma Food Science and Technology	With requirements for one year	-	30.09.2031

Technical Committee 10 – Life Sciences (06.03.2026)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee sees that UGM is one of the most prestigious universities in Indonesia and that the university made a very positive impression on the experts. Consequently, the proposed requirements relate more to technical and formal aspects (website, admissions regulations, ECTS credits) than to substantive criticisms. Overall, the expert group proposes four requirements and eight recommendations. The Technical Committee endorses this proposal.

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

Degree Programme	ASIIN Seal	Subject-specific label	Maximum duration of accreditation
Ma Biomedical Engineering	With requirements for one year	-	30.09.2031
PhD Biotechnology	With requirements for one year	-	30.09.2031
PhD Biological Sciences	With requirements for one year	-	30.09.2031
PhD Environmental Science	With requirements for one year	-	30.09.2031

Technical Committee 11 – Geosciences (16.03.2026)

Assessment and analysis for the award of the ASIIN seal:

The TC briefly discusses the procedure and agrees with the requirements and recommendations as suggested by the experts.

The Technical Committee 11 – Geosciences recommends the award of the seals as follows:

Degree Programme	ASIIN Seal	Subject-specific label	Maximum duration of accreditation
PhD Environmental Science	With requirements for one year	-	30.09.2031

I Decision of the Accreditation Commission (27.03.2026)

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

The Accreditation Commission discusses the procedure and decides to accredit the six study programmes with requirements for one year. The AC confirms the suggested replacement of the term “course” by the term “module”. Otherwise, the AC confirms the requirements and recommendations as proposed by the Technical Committees and the expert group.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN Seal	Subject-specific label	Maximum duration of accreditation
Ba Food and Agricultural Product Technology	With requirements for one year	-	30.09.2031
Ma Food Science and Technology	With requirements for one year	-	30.09.2031
Ma Biomedical Engineering	With requirements for one year	-	30.09.2031
PhD Biotechnology	With requirements for one year	-	30.09.2031
PhD Biological Sciences	With requirements for one year	-	30.09.2031
PhD Environmental Science	With requirements for one year	-	30.09.2031

Requirements

For all degree programmes

A 5. (ASIIN 1.5) Verify the students' total workload for each module and award the ECTS points accordingly. It needs to be transparent how many hours of students' workload are required for one ECTS point.

For the Master’s programmes

A 6. (ASIIN 1.4) The admission regulation needs to make transparent what competences are required and under what circumstances applicants have to join the matriculation programme before starting with a Master's programme.

For the Doctor Environmental Science

A 7. (ASIIN 4.3) The English homepage of the degree programme needs to include the essential information about the respective programme such as profile, intended learning outcomes, study plan, and a link to the module descriptions of all modules.

For the Master Biomedical Engineering

A 8. (ASIIN 4.3) The English homepage of the degree programme needs to include links to the module descriptions of all module.

Recommendations

For all degree programmes

E 9. (ASIIN 1.3) It is recommended to increase the students' academic mobility (incoming and outgoing) and to encourage Indonesian students to spend some time abroad during their studies.

E 10. (ASIIN 1.3) It is recommended to teach part of the subject-specific modules in English.

E 11. (ASIIN 1.3, 4.1) It is recommended to make transparent how AI is applied in the different modules.

E 12. ASIIN (3.3) It is recommended to improve the booking system for the advanced instruments in the centralised research labs to avoid bottlenecks and a prioritisation for important and urgent research projects should be possible.

E 13. (ASIIN 4.2) It is recommended to include the ECTS points of each module in the study plans.

For the Bachelor's and the Master's programmes

E 14. (ASIIN 1.3) It is recommended to improve Bachelor's and Master's students skills in problem solving e.g. through project based case studies.

E 15. (ASIIN 1.3) It is recommended to increase the scope and scientific demand of the laboratory modules.

For the Bachelor's programme

E 16. (ASIIN 1.3) It is recommended to offer a module in bioinformatics, which should be taught on an applied level (e.g. based on python).

Appendix: Program Learning Outcomes and Curricula

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Food and Agricultural Product Technology:

The Programme Education Objectives (PEO) of the programme are:

(1) To produce graduates who can design value-adding processes for food and agricultural products by combining the principles of food science with various engineering processing processes to produce safe, high-quality and eco-friendly products,

(2) To produce technological innovations that can increase the competitiveness of food products and agricultural products, and

(3) To provide technology packages that provide added value to food products and agricultural products that are utilized by the community.

The study programme translated the PEOs into specific Programme Learning Outcome (PLO) that are based on the national education curriculum, and IQF at level 6 (bachelor). The PLO consists of expected attitude (2 PLOs), knowledge (8 PLOs), general skills (3 PLOs), and specific skills (2 PLOs):

ATTITUDE After this Programme, The graduates are **able to:**	
A1	Show awareness of Pancasila attitudes, understanding the importance of the nation and state, and respecting cultural diversity **(PLO1.1)**
A2	Demonstrate social sensitivity, honesty, responsibility, self-confidence, emotional maturity, ethics, law-abiding behaviour, and awareness of lifelong learning **(PLO1.2)**
KNOWLEDGE The graduates are able to:	
K1	Be able to explain the structure and properties of food components / agricultural products (carbohydrates, proteins, lipids, water, other components, and food additives) and chemical changes that occur during processing **(PLO2.1)**
K2	Be able to explain microbes in food, both beneficial, pathogenic, and destructive, as well as the influence of the food system on their growth, survival, and control **(PLO2.2)**
K3	Be able to evaluate hazards (physical, chemical, and microbiological) associated with food systems, including their transmission and control **(PLO2.3)**
K4	Be able to use the principles of food engineering, food preservation and processing, packaging materials and methods, cleaning and sanitation, and water and waste management **(PLO2.4)**
K5	Be able to apply methods to assess the sensory properties of food **(PLO2.5)**
K6	Be able to apply the principles of food quality control and food quality assurance **(PLO2.6)**
K7	Be able to apply the regulations required for processing and marketing of food products **(PLO2.7)**
K8	Be able to evaluate changes in nutrients during processing, storage, and metabolism of nutrients and bioactive components **(PLO2.8)**
GENERAL SKILLS The graduates of BFAPT are demonstrating excellent skill in:	
G1	Be able to analyse data and make decisions in order to show independent and group performance to apply knowledge in social life **(PLO 3.1)**
G2	Be able to argue scientifically, think logically, critically, systematically, and innovatively by utilizing information technology to produce solutions in the field of food and agricultural products technology **(PLO 3.2)**
G3	Be able to communicate scientifically both orally and in writing **(PLO 3.3)**
SPECIFIC SKILLS The graduates are able to:	
S1	Be able to manage organizations and projects, and have the essential skills to work and interact with people from diverse backgrounds **(PLO 4.1)**
S2	Be able to design sustainable food processing units and agricultural products **(PLO 4.2)**

The following curriculum is presented:

Semester	Module Number	Module Name	Credits	Conversion of Credits to Hours	Conversion of Credits to ECTS
I	TPHP211101	Cell Biology	3	135,99	4,5
I	TPHP211102	Chemistry I (Inorganic)	3	135,99	4,5
I	TPHP211103	Chemistry – Laboratory Practice	1	45,33	1,5
I	TPHP211104	Physical Chemistry	2	90,66	3
I	TPHP211105	Introduction to Agricultural Technology	2	90,66	3
I	TPHP211106	Physics	2	90,66	3
I	TPHP211107	Physics – Laboratory Practice	1	45,33	1,5
I	TPHP211108	Mathematics	2	90,66	3
I	TPHP211109	English for Food Technology	2	90,66	3
I	TPHP211110	Material Properties of Food and Agricultural Product	2	90,66	3
II	TPHP211201	Microbiology	2	90,66	3
II	TPHP211202	Microbiology – Laboratory Practice	1	45,33	1,5
II	TPHP211203	Chemistry II (Organic)	3	135,99	4,5
II	TPHP211204	Biochemistry	3	135,99	4,5
II	TPHP211205	Unit Operation I	3	135,99	4,5
II	TPHP211206	Applied Mathematics	2	90,66	3

II	TPHP211207	Statistics	3	135,99	4,5
II	TPHP211208	Food Regulation	2	90,66	3
II	TPHP211209	Waste Management	3	135,99	4,5
II	TPHP211210	Waste Management – Laboratory Practice	1	45,33	1,5
III	TPHP212101	Food Microbiology	3	135,99	4,5
III	TPHP212102	Food Microbiology – Laboratory Practice	1	45,33	1,5
III	TPHP212103	Food and Agricultural Product Chemistry	2	90,66	3
III	TPHP212104	Thermal Process	2	90,66	3
III	TPHP212105	Unit Operation II	3	135,99	4,5
III	TPHP212106	Unit Operation III	3	135,99	4,5
III	TPHP212107	Nutrition Evaluation in Food Processing	2	90,66	3
III	TPHP212108	Nutrition Evaluation in Food Processing – Laboratory Practice	1	45,33	1,5
III	TPHP212109	Nutrition	3	135,99	4,5
III	TPHP212110	Meat and Fish Technology	2	90,66	3
III	TPHP212111	Legume, Cereals, and Tuber Technology	2	90,66	3
IV	TPHP212201	Food Industrial Sanitation	2	90,66	3
IV	UNU 3000	Civics	2	90,66	3
IV	UNU 161	Indonesian Language	2	90,66	3
IV	TPHP212202	Quality Control	2	90,66	3
IV	TPHP212203	Unit Operation – Laboratory Practice	1	45,33	1,5
IV	TPHP212204	Engineering Economics	2	90,66	3
IV	UNU 1100	Pancasila	2	90,66	3
IV	UNU 1000-1005	Theology	2	90,66	3
IV	TPHP212205	Food and Agricultural Product Analysis I	3	135,99	4,5

IV	TPHP212206	Food and Agricultural Product Analysis – Laboratory Practice	2	90,66	3
IV	TPHP212207	Dairy Product Technology	2	90,66	3
IV	TPHP212208	Bakery Technology	2	90,66	3
V	TPHP213101	Plant Design	3	135,99	4,5
V	TPHP213102	Research Methodology and Experimental Design	2	90,66	3
V	TPHP213103	Food Safety	2	90,66	3
V	TPHP213104	Sensory Evaluation	2	90,66	3
V	TPHP213105	Sensory Evaluation – Laboratory Practice	1	45,33	1,5
V	TPHP213106	Quality Management	2	90,66	3
V	TPHP213107	Functional Foods	2	90,66	3
V	TPHP213108	Nutrient Formulation and Fortification	2	90,66	3
V	TPHP213109	Indonesian Gastronomy	2	90,66	3
V	TPHP213110	Rubber and Tobacco Technology	2	90,66	3
V	TPHP213111	Coffee, Tea, and Cocoa Technology	3	135,99	4,5
V	TPHP213112	Spice and Seasoning Technology	2	90,66	3
V	TPHP213113	Oil and Fat Technology	2	90,66	3
V	TPHP213114	Industrial Microbiology	2	90,66	3
V	TPHP213115	Enzyme Technology	2	90,66	3
V	TPHP213116	Food and Agricultural Product Analysis II	2	90,66	3
V	TPHP213117	Fermentation Technology	2	90,66	3
V	TPHP213118	Fermentation Technology – Laboratory Practice	1	45,33	1,5
V	TPHP213119	Current Topic I	2	90,66	3
V	TPHP213120	Special Topics I	1	45,33	1,5

V	TPHP213121	Special Topics III	1	45,33	1,5
V	TPHP213122	Special Topics V	2	90,66	3
V	TPHP213123	Special Topics VII	2	90,66	3
V	TPHP213124	Special Topics IX	2	90,66	3
V	TPHP213125	Special Topics XI	2	90,66	3
V	TPHP213126	Special Topics XIII	3	135,99	4,5
V	TPHP213127	Special Topics XV	3	135,99	4,5
V	TPHP213128	Special Topics XVII	3	135,99	4,5
VI	TPHP213201	Entrepreneurship I	2	90,66	3
VI	TPHP213202	Product and Process Development	2	90,66	3
VI	TPHP213203	Product and Process Development – Laboratory Practice	3	135,99	4,5
VI	TPHP213204	Seminar	2	90,66	3
VI	TPHP213205	Industrial Internship I	3	135,99	4,5
VI	TPHP213206	Packaging Technology	2	90,66	3
VI	TPHP213207	Preservation Technology	2	90,66	3
VI	TPHP213208	Fruit and Vegetable Technology	2	90,66	3
VI	TPHP213209	Sugar Cane Technology	2	90,66	3
VI	TPHP213210	Food Service Management	2	90,66	3
VI	TPHP213211	Post Harvest Physiology and Technology	2	90,66	3
VI	TPHP213212	Flavor Technology	2	90,66	3
VI	TPHP213213	Food Biotechnology	2	90,66	3
VI	TPHP213214	Food and Nutrition Design	2	90,66	3
VI	TPHP213215	Current Topic II	2	90,66	3

VI	TPHP213216	Special Topics II	1	45,33	1,5
VI	TPHP213217	Special Topics IV	1	45,33	1,5
VI	TPHP213218	Special Topics VI	2	90,66	3
VI	TPHP213219	Special Topics VIII	2	90,66	3
VI	TPHP213220	Special Topics X	2	90,66	3
VI	TPHP213221	Special Topics XII	2	90,66	3
VI	TPHP213222	Special Topics XIV	3	135,99	4,5
VI	TPHP213223	Special Topics XVI	3	135,99	4,5
VI	TPHP213224	Special Topics XVIII	3	135,99	4,5
VII	TPHP214101	Research	6	271,98	9
VII	TPHP214102	Entrepreneurship II	8	362,64	12
VII	TPHP214103	Industrial Internship II	8	362,64	12
VII	TPHP214104	Independent project	8	362,64	12
VIII	UNU222001	Community Service	4	181,32	6
VIII	UNU222002	Community Communication	2	90,66	3
VIII	UNU222003	Application of Appropriate Technology	2	90,66	3

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Master's degree programme Food Science and Technology

Programme Learning Outcomes:

Regular Track		By Research Track	
ATTITUDE The graduates are expected to demonstrate:		**ATTITUDE** The graduates are expected to demonstrate:	
A1	Pancasila minded and have awareness of the interest of the nation **(PLO 1)**	**A1**	Pancasila-based mindset, uphold academic integrity, and show awareness of contributing to national advancement through scientific research **(PLO 1)**
A2	Having responsibility, confidence, emotional maturity, ethics, and awareness of being a lifelong learner **(PLO 2)**	**A2**	Exhibit responsibility, confidence, emotional maturity, and professional ethics as an independent researcher, with a strong commitment to lifelong learning and continuous self-development.
KNOWLEDGE The graduates are **mastering**:		-	
K1	theoretical concepts in specific areas of food science and technology and understand its recent advances **(PLO 3)**		
SPECIFIC SKILLS The graduates are **able to**:		**SPECIFIC SKILLS** The graduates are **able to**:	
S1	gather information from scientific findings, develop a conceptual framework and formulate research problems **(PLO 4)**	**S1**	identify research gaps from existing scientific literature, construct a conceptual framework, and formulate relevant research questions or hypotheses that advance scientific knowledge **(PLO 3)**
S2	take a scientific approach to solve problems through the measurement of appropriate variables, to collect valid data, to interpret the data, and relate it to research problem-solving **(PLO 5)**	**S2**	design and conduct research independently using a scientific and systematic approach, select and measure appropriate variables, collect valid data, analyze and interpret results critically to address research problems **(PLO 4)**
S3	communicate the scientific findings in scientific conferences or scientific journals **(PLO 6)**	**S3**	Able to prepare research reports, publish scientific papers, and present findings effectively and ethically in national and international scientific forums, both in written and oral form **(PLO 5)**

The following curriculum is presented:

Semester	Course Code	Course Title	Credits Unit							Workload (Hours)	ECTS
			Compulsory	Elective	Matriculation	Theory	Laboratory Practice	Practice	Total		
I	TPTP215011	Research Methodology	3			3			3	144	5,5
	TPTP215013	Advanced Food Analysis	2			2			2	96	3,7
	TPTP215014	Scientific Communication I	1			1			1	48	1,85
II	TPTP215012	Independent Study	3			3			3	144	5,5
III - IV	TPTP216091	Thesis (Regular Program)	12			12			12	880	33,8
	TPTP216092	Thesis (By Research Program)	30			30			30	880	33,8
IV	TPTP216011	Scientific Communication II	1			1			1	48	1,85
Amount			**52**	**0**	**0**	**52**	**0**	**0**	**52**	**2240**	

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Master's degree programme Biomedical Engineering:

Programme Education Objectives (PEO):

1. The graduates can solve problems in the biomedical field using engineering principles in an interdisciplinary or multidisciplinary manner.

2. The graduates can develop innovative knowledge and technology in the biomedical industry (such as artificial organs and medical instrumentation).

3. The Graduates are capable of continuously keeping up with developments in science and technology relevant to their professional careers.

Programme Learning Outcomes (PLO):

ATTITUDE **A1: After completing this program, graduates are eager to demonstrate professionalism and adhere to bioethical principles (PLO-6)**	
Regular track	**By research track**
Focus: Understanding and applying professional codes of conduct and bioethical standards in the design, development, and application of biomedical technologies. **Specific outcome:** Able to demonstrate professionalism and apply bioethical principles in the design, development, and implementation of biomedical engineering solutions that prioritize safety, integrity, and societal well-being. Bloom's level of competence:	**Focus:** Mastery of research ethics, academic integrity, and bioethical frameworks guiding biomedical research involving human, animal, or digital biological data. **Specific outcome:** Able to demonstrate professionalism and uphold bioethical and research integrity principles in the design, conduct, and dissemination of biomedical engineering research. Bloom's level of competence: C5–C6 (Evaluation–Creation)

C3–C4 (Application–Analysis)	
KNOWLEDGE **K1: Graduates are competent in designing research related to artificial organs and medical instrumentation (PLO-2).**	
Regular track	**By research track**
Focus: Understanding research principles and methodologies used in biomedical engineering, with emphasis on applied or developmental studies. **Specific outcome:** Able to design and implement applied research or development projects related to artificial organs and medical instrumentation using established engineering and biomedical principles. Bloom's level of competence: C4–C5 (Analysis–Evaluation)	**Focus:** Deep and specialized understanding of research design and methodological innovation in biomedical engineering **Specific outcome:** Able to independently design and conduct original research that generates new knowledge or innovations in the field of artificial organs and medical instrumentation. Bloom's level of competence: C5–C6 (Evaluation–Creation)
KNOWLEDGE **K2: Graduates are competent in testing and analysing design results that are relevant in the field of biomedical engineering (PLO-3)**	
Regular track	**By research track**
Focus: The application of established testing methods and analytical tools in assessing biomedical designs or prototypes. **Specific outcome:** Able to apply appropriate testing standards and analytical techniques to evaluate and interpret biomedical engineering design results for practical and industrial applications. Bloom's level of competence: C4–C5 (Analysis–Evaluation)	**Focus:** Deep understanding and innovative testing and analytical methodologies for new or complex biomedical engineering designs **Specific outcome:** Able to design and implement advanced testing and analytical approaches to validate and interpret innovative biomedical engineering designs, thereby contributing to the development of new knowledge or technology. Bloom's level of competence: C4–C5 (Analysis–Evaluation)
GENERAL SKILLS **G1: Graduates are competent in communicating and working effectively within a multidisciplinary team (PLO-4)**	
Regular track	**By research track**
Focus: Understanding the principles of professional communication and teamwork in the context of applied biomedical engineering. **Specific outcome:** Able to communicate ideas, technical results, and project outcomes clearly and to collaborate effectively within multidisciplinary teams in professional biomedical engineering settings. Bloom's level of competence: C3–C4 (Application–Analysis)	**Focus:** Mastery of scientific communication and collaborative research practices in interdisciplinary biomedical engineering studies **Specific outcome:** Able to communicate scientific concepts and research findings effectively and to collaborate with multidisciplinary research teams to advance knowledge in biomedical engineering. Bloom's level of competence: C5–C6 (Evaluation–Creation).

GENERAL SKILLS **G2: Graduates are competent in presenting biomedical engineering work both in writing and orally (PLO-5)**	
Regular track	**By research track**
Focus: Application of professional and technical communication principles to present biomedical engineering work in structured formats (reports, design documentation, project presentations) **Specific outcome:** Able to prepare clear, structured, and professional written reports and oral presentations to effectively communicate biomedical engineering project results and applications. Bloom's level of competence: C3–C4 (Application–Analysis)	**Focus:** Mastery of scientific and academic communication to present original research findings in written and oral formats suitable for scholarly dissemination. **Specific outcome:** Able to prepare scientific manuscripts, theses, and oral presentations that effectively communicate original research findings in biomedical engineering to academic and professional audience. Bloom's level of competence: C5–C6 (Evaluation–Creation)
SPECIFIC SKILLS **S1: Graduate are competent in applying knowledge in engineering, health, and biology to analyse problems in the field of biomedical engineering on a global scale that is relevant to societal needs (PLO-1)**	
Regular track	**By research track**
Focus: A comprehensive and interdisciplinary understanding of concepts in engineering, biology, and health sciences, applied to biomedical challenges. **Specific outcome:** Able to apply and synthesize multidisciplinary knowledge to solve practical or professional problems. Bloom's level of competence: C3–C4 (Application–Analysis)	**Focus:** Deep, specialized, and original understanding of a specific biomedical engineering problem is achieved through research. **Specific outcome:** Able to create or expand knowledge through systematic, independent research that integrates engineering, biological, and health science principles. Bloom's level of competence: C5–C6 (Evaluation–Creation).
SPECIFIC SKILLS **S2: Graduates are competent in continuous self-development and adapting to advancements in biomedical science and technology (PLO-7)**	
Regular track	**By research track**
Focus: Broad understanding of emerging biomedical technologies, standards, and practices, emphasizing professional updating and applied learning. **Specific outcome:** Able to engage in continuous self-development and apply advancements in biomedical science and technology to maintain and enhance professional competence Bloom's level of competence:	**Focus:** Deep and reflective understanding of emerging frontiers in biomedical research, with the ability to identify gaps and direct self-learning to sustain research excellence. **Specific outcome:** Able to continuously develop research capability and adapt to emerging knowledge and technologies in biomedical science to sustain innovation and scholarly contribution. Bloom's level of competence:

The following curriculum is presented:

A. Regular Program

Semester 1 Courses

No.	Code	Course Name	SKS
1	SPSTB 212101	Biomedical Engineering Principles	3
2	SPSTB 212102	Applied Biomedical System Design	3
3	SPSTB 212103	Anatomy and Physiology for Biomedical Engineering	3
4	SPSTB 212104	Applied Mathematics for Bioengineering	3
5	SPSTB 212105	Research Methodology and Experimental Design	3

Semester 2 Courses

No.	Code	Course Name	SKS
1	SPSTB 212206	Applied Biostatistics	3
2	SPSTB 212207	Bioethics and Safety (Bioethics and Safety)	3
3		Elective Course 1	3
4		Elective Course 2	3
5		Elective Course 3	3

Semester 3 Courses

No.	Code	Course Name	SKS
1		Elective Course 4	3
2		Elective Course 5	3

Semester 4 Courses

No.	Old Code	Course Name	SKS
1	SPSTB 212499	Thesis	8

B. By Research

No.	Code	Course Name	SKS	
1	SPSTB 232101	Biomedical Engineering Principles	3	W
2		Elective Course 1	3	P
3		Elective Course 2	3	P
4	SPSTB 232160	Research Proposal	3	W
5	SPSTB 232161	Proposal Seminar	2	W

Semester 2 Courses

No.	Code	Course Name	SKS	Characteristic
1	SPSTB 232262	Research I	5	W
2	SPSTB 232263	Research Results Seminar I:	2	W
3	SPSTB 232264	Publication Manuscript I	4	W

Semester 3 Courses

No.		Course Name	SKS	Characteristic
1	SPSTB 232365	Research II	5	W
2	SPSTB 232366	Research Results Seminar II	2	W
3	SPSTB 232367	Publication Manuscript II	4	W

Semester 4 Courses

No.	Code	Course Name	SKS	Characteristic
1	SPSTB 232499	Thesis	8	W

Elective Courses

No.	Code	Elective Course Name: BIOMATERIAL (Biomaterials)	SKS
1	SPSTB 212220	Biomaterial Testing and Characterization	3
2	SPSTB 212221	Applied Biomaterials (Applied Biomaterials)	3

3	SPSTB 212222	Tissue Engineering	3
4	SPSTB 212223	Drug Delivery System (Drug Delivery System)	3
5	SPSTB 212224	Biocompatibility (Biocompatibility)	3
No.	**Code**	**Elective Course Name: Instrumentation, Signals, Imaging and Computing Biomedicine (Biomedical Instrumentation, Signal, Imaging & Computing)**	**SKS**
1	SPSTB 212225	Biomedical Instrumentation and Devices	3
2	SPSTB 212226	Biomedical Imaging	3
3	SPSTB 212227	Artificial Intelligence in Biomedical Engineering	3
4	SPSTB 212228	Biomedical Signal Acquisition	3
5	SPSTB 212229	Biomedical Signal Analysis	3
No.	**Code**	**Name of Elective Course: Bioinformatics**	**SKS**
1	SPSTB 212230	Medical Informatics and Telemedicine	3
2	SPSTB (212231)	Computational and Systems Biology	3
3	SPSTB (212232)	Biocomputational Language	3
4	SPSTB (212233)	Biomedical Informatics	3
5	SPSTB (212234)	Management of Medical Data	3
No.	**Code**	**Name of Elective Course: Medical Device Development Development)**	**SKS**
1	SPSTB (212235)	Biomechanics	3
2	SPSTB (212236)	Artificial Organs	3
3	SPSTB (212237)	Layer Manufacturing Technology (Layer Manufacturing Technology)	3
4	SPSTB (212238)	Computer-aided Medical Equipment Design (Computer-Aided Design for Medical Devices)	3
5	SPSTB (212239)	Animal Models in Biomedical Research	3
No.	**Code**	**Name of Elective Course: Health Care System**	**SKS**
1	SPSTB(212240)	Lean Health Care Systems	3

2	SPSTB (212241)	Supply Chain Management in Health Care Systems *Systems*)	3
3	SPSTB (212242)	Inventory and Logistics Control in the System Health Care Services (Logistic and Inventory Control in Health Care Systems)	3
4	SPSTB (212243)	Maintenance Management in Health Care System *Systems*)	3
5	SPSTB (212244)	Modeling and Optimization of Health Care Systems	3
No.	**Code**	**General Elective Course Names:**	**SKS**
1	SPSTB (212350)	Current Topics in Medical Devices: Techno entrepreneurship	3

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the PhD programme Biotechnology:

Programme Educational Objectives (PEO):

1. Advanced Expertise in Biotechnology Graduates will possess comprehensive and advanced knowledge in biotechnology, enabling them to contribute to scientific advancements and address complex challenges in fields such as health, agriculture, industry, and the environment.
2. High-Impact Research Graduates will be equipped to conduct independent, innovative, and high-impact research that contributes to the development of new biotechnological solutions, advancing both theoretical understanding and practical applications in the field.
3. Leadership in Academia and Industry Graduates will be prepared to take on leadership roles in academic, industrial, and research institutions, demonstrating expertise in multidisciplinary biotechnology and the ability to drive innovation and decision-making in complex environments.
4. Ethical and Responsible Scientific Practice Graduates will demonstrate a commitment to academic integrity, scientific ethics, and professional responsibility, ensuring their work adheres to the highest ethical standards and contributes positively to society and the global scientific community.
5. Lifelong Learning and Professional Development Graduates will possess a commitment to lifelong learning, continuously updating their skills and knowledge in response to the dynamic developments in biotechnology and related fields, while fostering the growth and education of future biotechnology professionals.

Programme Learning Outcomes (PLO):

Regular track		By research track	
ATTITUDE After this Programme, The graduates are **willing to**		**ATTITUDE** After this Programme, The graduates are **willing to**	
A1	Contribute to the improvement of the quality of life in society, the nation, and the state, as well as the advancement of civilization, based on the principles of Pancasila **(PLO1)**	**A1**	Contribute to the improvement of the quality of life in society, the nation, and the state, as well as the advancement of civilization, based on the principles of Pancasila **(PLO1)**
A2	Demonstrate honesty, responsibility, confidence, emotional maturity, ethical behaviour, and a commitment to lifelong learning **(PLO2)**	**A2**	Demonstrate honesty, responsibility, confidence, emotional maturity, ethical behaviour, and a commitment to lifelong learning **(PLO2)**
KNOWLEDGE The graduates are mastering and contributing on		**KNOWLEDGE** The graduates are mastering and contributing on	
K1	the development of theories or concepts in Biotechnology and Molecular Biology, including the interactions between cells, tissues, organs, and living organisms with their environment **(PLO3)**	**K1**	Advancement of knowledge of the interactions between cells, tissues, organs, and living organisms with their environment **(PLO3)**
K2	Advancement of knowledge of the interactions between cells, tissues, organs, and living organisms with their environment **(PLO4)**	**K2**	advancement of systems biology and data integration approaches and apply state-of-the-art biotechnological tools to address complex research problems. **(PLO4)**
K3	concept of cell, tissue, and organ propagation for the advanced production of biotechnology products **(PLO5)**		

The following curriculum is presented:

Regular Track:

Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6
Scientific Research Methodology SPSBT-213101 (3 SKS/5.4 ECTS) **A1, A2, G1, G2, S1**	Elective course 1 SPSBT-213xxx (2 SKS/3.6 ECTS) **K1–K3, G1–G3, S1–S2**	Dissertation (Proposal and Research) SPSBT-213104 (33.8 ECTS) **A1, A2, G1, G2, S1**	Dissertation (Research and Seminar I) SPSBT-213104 (33.8 ECTS) **K1, K2, G2, S1**	Dissertation (Research, Seminar II and Publication) SPSBT-213104 (33.8 ECTS) **A1, G2, G3, S2**	Dissertation (Research and Defense) SPSBT-213104 (33.8 ECTS) **A2, K3, G3, S2**
Selective Topics in Biotechnology SPSBT-213102 (3 SKS/ 5.4 ECTS) **K1, K2, K3, G3** Bioinformatics and Data Analysis in Biotechnology SPSBT-213103 (2 SKS/3.6 ECTS) **K2, G2, S1**	Elective course 2 (optional) SPSBT-213xxx (2 SKS/3.6 ECTS) **K1–K3, G1–G3, S1–S2** Elective course 3 (optional) SPSBT-213xxx (2 SKS/3.6 ECTS) **K1–K3, G1–G3, S1–S2**				
14.4 ECTS	**3.6 ECTS**	**33.8 ECTS**	**33.8 ECTS**	**33.8 ECTS**	**33.8 ECTS**
Total : 156,8 ECTS					

Research Track

Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6
Scientific Research Methodology SPSBT-213101 (3 SKS/5.4 ECTS) **K1, G1, A1**	Dissertation (Proposal and research) SPSBT-213104 (33.8 ECTS) **A1, G1, S1, S2**	Dissertation (Research and seminar I) SPSBT-213104 (33.8 ECTS) **A2, G2, G3, S1**	Dissertation (Research and Publication I SPSBT-213104 (33.8 ECTS) **A2, G2, G3, S2**	Dissertation (Research, Seminar II, and Publication II SPSBT-213104 (33.8 ECTS) **A2, G2, G3, S2**	Dissertation (Research and Defense) SPSBT-213104 (33.8 ECTS) **A1, A2, G3, S2**
Selective Topics in Biotechnology SPSBT-213102 (3 SKS/5.4 ECTS) **K2, S1, A2**					
10.8 ECTS	**37.4 ECTS**	**33.8 ETCS**	**33.8 ETCS**	**33.8 ETCS**	**33.8 ETCS**
183.6 ECTS					

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the PhD programme Biological Sciences:

PLO CODE	REGULAR PATHWAY	BY RESEARCH PATHWAY
ATTITUDE Upon completing this Programme, the graduates demonstrate an attitude of being able to:		
AT1	contribute to improving the quality of life in society, nation and state, and the progress of civilization based on Pancasila;	participate actively in the progress of society, the nation, and the state through innovative and relevant biological research, based on Pancasila.
AT2	demonstrate honesty, responsibility, self-confidence, emotional maturity, ethics, and awareness of being a lifelong learner;	demonstrate high scientific integrity, responsibility, self-confidence, and emotional maturity throughout every stage of research as well as recognize their role as lifelong learners who continuously develop themselves.
AT3	internalize academic values, norms and ethics;	internalize academic norms and ethics in depth, including matters of data ownership, copyright, and scientific collaboration.
	GENERAL SKILLS After completing this Programme, the graduates will be able to:	
GS1	discover or develop new scientific theories/concepts/ideas in biology;	formulate, design, or develop original, new scientific theories, concepts, or ideas in the field of biology through deep and critical independent research.
GS2	contribute to the development and practice of the field of biology through scientific research based on scientific principles and ethics through interdisciplinary, multidisciplinary, or transdisciplinary approaches in solving problems in the field of biology;	identify, integrate, and modify biological knowledge from various disciplines (interdisciplinary, multidisciplinary, or transdisciplinary) to analyse and solve complex scientific problems.
GS3	managing and formulating valid and accountable research data by upholding academic integrity and prioritizing anti-plagiarism;	organize, interpret, and evaluate valid and accountable research data, and uphold academic integrity and anti-plagiarism in all publications and reports.
GS4	communicate research results through reputable media and scientific publications to the academic community and/or directly to the wider community; and	construct and present research findings effectively through publications in reputable scientific media (international journals, proceedings) and/or direct presentations to the academic community and the wider public.
GS5	demonstrate academic leadership and increase independent learning capacity.	Plan, lead, and evaluate research progress, as well as demonstrate capability to do self-directed learning and continuously develop their capacity

	KNOWLEDGE After completing this Programme, the graduates will be able to:	
KN1	explain the scientific philosophy of biology which is related in depth to structure, function, diversity, reproduction, evolution and engineering of biological systems;	explain and critique the philosophy and scientific paradigms of biology in depth, especially regarding the structure, function, diversity, reproduction, evolution, and engineering of biological systems, in order to formulate strong scientific arguments.
KN2	assess substantial and leading theory in the field of biology/biological resources in order to support education for sustainable development; and	assess substantial and cutting-edge theories in the field of biology to construct sustainable solutions that can be implemented.
KN3	synthesize and generate new concepts in the fields of biology and applied biology.	synthesize and generate new concepts in the fields of biology and applied biology that are relevant to scientific advancements and industry needs.
	SPECIFIC SKILLS After participating in this Programme, graduates will be able to:	
SS1	deepen and expand knowledge in the field of biology to produce models or methods or develop theories that are original, tested and innovative through research with an interdisciplinary, multidisciplinary or transdisciplinary approach;	do synthesizing, organizing, and building knowledge in the field of biology to produce original, tested, and innovative models, methods, or theories through research with an interdisciplinary, multidisciplinary, or transdisciplinary approach
SS2	propose new solutions or recommend proposed solutions to solve biological resource problems in a sustainable manner through an interdisciplinary or multidisciplinary approach to fund deduction or induction; and	analyse and evaluate various solutions to solve biological resource problems sustainably through a deductive or inductive approach, then formulating the innovative and most effective solution.
SS3	apply the philosophy of biological systems in developing biological concepts in the areas of food, health, bioenergy, biomaterial and/or the environment	develop and apply the philosophy of biological systems in organizing biological concepts in the fields of food, health, bioenergy, biomaterials, and/or the environment in an innovative and targeted manner.

The following curriculum is presented:

A. Regular programme

	Course Code	Course Name	Course Type[1)]	Credits
Semester I				
1	BIDB203101	Metodologi Penelitian dan Penulisan Karya Ilmiah *Research Methodology and Scientific Writing*	MKWP/*PCP*	2
2	BIDB203102	Filsafat Ilmu *Philosophy of Science*	MKWP/*PCP*	2
3	BIDB203103	Kapita Selekta *Selected Topic for Dissertations*	MKWP/*PCP*	2
4		Mata Kuliah Pendukung Disertasi *Dissertation Supporting Courses*	MKPD/DSC	6-8
		Jumlah SKS/*Total credits*		12-14
Semester II				
1	BIDB203201	Ujian Komprehensif *Comprehensive Exam*[2)]	MKWP/*PCP*	4
2	BIDB203202	Seminar Wajib (Nasional/ Internasional)[3)] *Scientific Conference (National or International level)*	MKWP/*PCP*	3
		Jumlah SKS/*Total credits*		7
Semester III				
1	BIDB203301	Penelitian I[4)] *Dissertation Research I*	MKWP/*PCP*	2
2	BIDB203302	Publikasi[5)] *Publication*	MKWP/*PCP*	8
		Jumlah SKS/*Total credits*		10
Semester IV				
1	BIDB203401	Penelitian II[4)] *Dissertation Research II*	MKWP/*PCP*	2
		Jumlah SKS/*Total credits*		2
Semester V				
1	BIDB203502	Penelitian III[4)] *Dissertation Research III*	MKWP/*PCP*	2
		Jumlah SKS/*Total credits*		2
Jumlah SKS/*Total credits*				
1	BIDB203601	Kelayakan Disertasi[6)] *Dissertation Appropriateness*	MKWP/*PCP*	3
2	BIDB203602	Disertasi[7)] *Dissertation Final Exam*	MKWP/*PCP*	10
		Jumlah SKS/*Total credits*		13

B. Research programme

	Course Code	Course Name	Course Type[1)]	Credits
Semester I				
1	BIDB203101	Metodologi Penelitian dan Penulisan Karya Ilmiah *Research Methodology and Scientific Writing*	MKWP/*PCP*	2
2	BIDB203102	Filsafat Ilmu *Philosophy of Science*	MKWP/*PCP*	2
3		Mata Kuliah Pendukung Disertasi I *Dissertation Supporting Courses I*	MKPD/DSC	2
4		Mata Kuliah Pendukung Disertasi II *Dissertation Supporting Courses II*	MKPD/DSC	2
		Jumlah SKS/*Total credits*		8
Semester II				
1	BIDB203201	Ujian Komprehensif *Comprehensive Exam*[2)]	MKWP/*PCP*	2
2	BIDB203301	Penelitian I[4)] *Dissertation Research I*	MKWP/*PCP*	4
		Jumlah SKS/*Total credits*		6
Semester III				
1	BIDB203401	Penelitian II[4)] *Dissertation Research II*	MKWP/*PCP*	4
2	BIDB203302	Publikasi I[5)] *Publication I*	MKWP/*PCP*	6
		Jumlah SKS/*Total credits*		10
Semester IV				
1	BIDB203202	Seminar Wajib (Nasional/ Internasional)[3)] *Scientific Conference (National or International level)*	MKWP/*PCP*	2
	BIDB203502	Penelitian III[4)] *Dissertation Research III*	MKWP/*PCP*	4
		Jumlah SKS/*Total credits*		6
Semester V				
1	BIDB203302	Publikasi II[5)] *Publication II*	MKWP/*PCP*	6
		Jumlah SKS/*Total credits*		6
Semester VI				
1	BIDB203602	Disertasi[6)] *Dissertation Final Exam*	MKWP/*PCP*	10
		Jumlah SKS/*Total credits*		10

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the PhD programme Environmental Science:

PLO CODE	PLO REGULAR TRACK	PLO BY RESEARCH TRACK
ATTITUDE, after completing this Programme, the graduates are **willing to**:		
A.1.	have the spirit of Pancasila and have an awareness of the national interest (PLO 1)	have the spirit of Pancasila and have an awareness of the national interest (PLO 1)
A.2.	be responsible, confident, have emotional maturity, ethical, and aware of being a lifelong learner (PLO 2).	be responsible, confident, have emotional maturity, ethical, and aware of being a lifelong learner (PLO 2).
KNOWLEDGE, The graduates are **mastering** and **contributing** on		
K.1.	the philosophy, theory of environmental science, and concepts or theories on the principles of environmental science concerning diversity, interconnectedness, dependency, harmony, and sustainability between abiotic, biotic, and cultural environmental components (PLO 3).	the philosophy, theory of environmental science, and concepts or theories on the principles of environmental science concerning diversity, interconnectedness, dependency, harmony, and sustainability between abiotic, biotic, and cultural environmental components (PLO 3).
K.2.	finding **NEW IDEAS AND APPROACH** in developing environmental science knowledge through research, producing creative, original, and tested works with a comprehensive Environmental Science approach; through inter, multi, and trans-disciplinary approaches (PLO 4)	finding **NEW IDEAS, CONCEPTS, THEORIES, OR METHODS in** developing environmental science knowledge through research, producing creative, original, and tested works with a comprehensive Environmental Science approach; through inter, multi, and trans-disciplinary approaches (PLO 4)
SPECIALIZED SKILLS, The graduates are **able to:**		
S.1.	conduct environmental research through multidisciplinary/ interdisciplinary/ transdisciplinary approaches and publish or disseminate research for solving environmental problems, **RESEARCH FOCUS MORE PRACTICAL AND AIMS TO SOLVE REAL-WORLD PROFESSIONAL PRACTICES** (PLO 5).	conduct environmental research through multidisciplinary/ interdisciplinary/ transdisciplinary approaches and publish or disseminate research for solving environmental problems, **RESEACH FOCUS ON THEORIETICAL AND AIMS TO ADVANCE ACADEMIC KNOWLEDGE** (PLO 5).
S.2.	work independently as a lifelong learner, to think critically and strategically, as well as to lead/manage a team to analyse and solve environmental problems (PLO 6).	work independently as a lifelong learner, to think critically and strategically, as well as to lead/manage a team to analyse and solve environmental problems (PLO 6).
GENERAL SKILLS, The graduates are **able to:**		
G.1	thinks logically, critically, systematically and innovative by utilizing technology to solve environmental problem in the areas of their expertise with integrity (PLO 7)	thinks logically, critically, systematically and innovative by utilizing technology to **ADVANCE KNOWLEDGE** and solve environmental problem in the areas of their research themes with integrity (PLO 7)
G.2	develop networks, be adaptive, creative, contribute, supervise, evaluate, and make decisions independently and as team works in apply knowledge to the community (PLO 8).	develop networks, be adaptive, creative, contribute, supervise, evaluate, and make decisions independently and as team works in apply knowledge to the community (PLO 8).

The following curriculum is presented:

A. Regular programme

NO	ID	COURSE SUBJECT	NUMBER OF COURSES	CREDITS
SEMESTER I				
1	SPSIL213101	Science Philosophy	1	2
2.	SPSIL213102	Research Methods	1	2
3	SPSIL213103	Capita Selecta	1	2
SEMESTER II				
4	SPSIL213204 - SPSIL213229	Elective Courses (Offer by Program) Elective Courses (Across Programs) Independent Study	2	4
SEMESTER III – VI				
5	SPSIL213330	Dissertation	1	36

Dissertation Breakdown

1. Proposal : 8 Credits
2. Publication : 12 Credits
3. Dissertation : 16 Credits

B. Research programme

NO	ID	COURSE SUBJECT	NUMBER OF COURSES	CREDITS
SEMESTER I				
1	SPSIL213101	Science Philosophy	1	2
2.	SPSIL213102	Research Methods	1	2
3	SPSIL213103	Capita Selecta	1	2
SEMESTER II – VI				
5	SPSIL213330	Dissertation	1	40

Dissertation Breakdown

4. Proposal : 8 Credits
5. Publication : 14 Credits
6. Dissertation : 18 Credits