ACADEMIC GUIDELINES
MASTER IN FOOD SCIENCE AND TECHNOLOGY

FACULTY OF AGRICULTURAL TECHNOLOGY

UNIVERSITAS GADJAH MADA

2024

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LIST OF ABBREVIATIONS

AcEPT : Academic English Proficiecy Test
AEB : Agricultural Engineering and Biosystem
AIT : Agricultural Industrial Technology
AMI : *Audit Mutu Internal* (Internal Quality Audit)
AWRL : Airborne Wireless Radio Link
BAN-PT : *Badan Akreditasi Nasional Perguruan Tinggi* (National Accreditation Board for Higher Education)
BTMs : Basic Transmittance Measurement instruments
BUDI DN : *Beasiswa Unggulan Dosen Indonesia Dalam Negeri* (Distinguished Scholarship for Domestic Indonesian Lecturers)
FAO : Food and Agriculture Organization
FAT : Faculty of Agricultural Technology
FTAP : Food Technology and Agricultural Products
GIS : Geographic Information Systems
GPA : Grade Point Average
ICT : Information and Communication Technology
IELTS : International English Testing System
KHS : *Kartu Hasil Studi* (Study Result Card)
KRS : *Kartu Rencana Studi* (Study Plan Card)
LAN : Local Area Network
LMC : Library Member Card
OBE : Outcome Based Education
OECF : Overseas Economic Cooperation Fund
PAPs : *Potential Akademik Pascasarjana* (Academic Potential Test)
PBL : Problem-Based Learning
PDDIKTI : *Pangkalan Data Pendidikan Tinggi* (Higher Education Database)
PTIP : *Pendidikan Tinggi Ilmu Pertanian* (Higher Education in Agricultural Science)
QMR : Quality Manager Rrepresentatice

RBCS : Research-Based Community Service
RBL : Research-Based Learning
RKAT : *Rencana Kerja Anggaran dan Tahunan* (Budget and Annual Work Plan)
SCL : Student-Centered Learning
SKS : *Satuan Kredit Semester* (Semester Credit System)
SSD : Saturated Surface Dray
S.T.P : *Sarjana Teknologi Pertanian* (Bachelor of Agricultural Technology
TPA : *Tes Potential Academic* (Academic Potential Test)
TCL : Teacher-Centered Learning
TOEFL iBT : Internet-Based Test of English as a Foreign Language
TOEFL ITP : Institutional Testing Program Test of English as Foreign Language
TOEP : Test of English Proficiency
UAS : *Ujian Akhir Semester* (Final Examination Periode)
UMM : *Unit Managemen Mutu* (Quality Management Unit)
UTIK : *Unit Teknologi Informasi dan Komunikasi* (Information and Communication Technology Unit)
UTS : *Ujian Tengah Semester* (Midterm Examination Period)
WHO : World Health Organization
Wi-Fi : Wireless Internet Access

CHAPTER I. INTRODUCTION

1.1. Introduction

The Faculty of Agricultural Technology (FAT), Universitas Gadjah Mada (UGM) was previously one of the departments at the Faculty of Agriculture UGM. However, in the next developments, there was a need for a broader and deeper application of technology so that the agricultural sector played a more important role in the development of the nation and state. Thus, the Department of Agricultural Technology developed into the FAT and was inaugurated on September 19, 1963.

FAT UGM focuses on the study of the development and application of technology for agriculture by involving chemistry, biology, microbiology, mathematics, physics, management, and engineering in soil conservation and water management systems, agricultural equipment design, food technology and agricultural products, preservation technology, development of new products of high economic value, process optimization, system analysis and management in the agricultural industry system, and agro-industry.

The implementation of these studies was organized by the Department of Food Technology and Agricultural Products (FTAP), the Department of Agricultural Engineering and Biosystems (AEB), and the Department of Agricultural Industrial Technology (AIT). With these studies, the FAT is ready to hold various collaborations in the field of agro-industry with all stakeholders such as industry, local government, private sector, universities, research and development agencies and other institutions related to the field of agricultural technology.

FAT UGM is always ready to accommodate qualified, talented, and interested student candidates who pass the selection of new student admissions organized by UGM to be educated into bachelor's, master's, or doctoral degrees who have high competence and can compete at national and international levels.

1.2. Vision

FAT UGM aspires to be a global centre of excellence in executing the tri-dharma of higher education in the field of agro-industry.

1.3. Mission

To achieve the vision that has been set, it is carried out through the following missions:

1) Carry out higher education with an international reputation in the field of agro-industry to produce graduates who are superior competence, noble character and imbued with Pancasila values.
2) Carry out research and innovation in the field of agro-industry to develop science and technology that benefits the community, both locally, nationally, and globally.
3) Carry out sustainable community service and empowerment based on the application of science and technology innovation and agrotechno-preneurship.

4) Organizing efficient, effective, accountable and professional organizational governance in accordance with the principles of good faculty governance

1.4. Objectives

To achieve the vision and mission of FAT UGM is becoming a centre of excellence for agro-industry through five objectives:

1) Strengthening synergy between departments in implementing the Tridharma of the University.
2) Improving the quality and governance of Undergraduate and Postgraduate Programs to achieve international reputation.
3) Improving the academic reputation of graduates through the development of scientific ethics, socio-techno-preneur and student soft skills.
4) Improving the quality and number of innovative research results that are ready to be published and applied in industry and society in an integrated manner.
5) Development of systemized external cooperation for education, research and community service.

1.5. Graduate Competencies

According to the Decree of the Minister of National Education No. 045/U/2002, what is meant by competence is a set of intelligent actions full of responsibility that a person has as a condition to be considered capable of carrying out tasks in a particular field of work. One of the educational objectives at FAT UGM is to produce graduates with high competence in the fields of science that have been studied in each study program so that they can be used for the benefit of the community.

In addition to special competencies in their fields of science, graduates of FAT UGM are also expected to have general competencies that can be used as provisions for community life with the following characteristics:

1) Have the ability to solve problems, develop, and practice science and technology in the field of agricultural technology.
2) Have the ability to communicate, build cooperation, and build an entrepreneurial spirit.
3) Have a social, responsible, ethical, and professional character in their field.

CHAPTER II. ACADEMIC POLICY

2.1. General Policy Directions

1) FAT UGM has the vision to be an international centre of excellence in the implementation of education, research, and community service (tri-dharma Perguruan Tinggi) in the field of agro-industry.
2) FAT UGM has a mission: (i) establish FAT as a healthy provider of the tri-dharma of higher education, (ii) professionalizing the academic community, (iii) internationalizing the quality of performance of the academic community, and (iv) to form strong cooperation with national and international stakeholders to graduate bachelors, masters, and doctors who have high competence and commendable character.
3) FAT UGM actively participates in actualizing a knowledge-based society through the provision of academic education (undergraduate and postgraduate) in food technology and agricultural products, engineering agriculture, and agricultural industrial technology in the agro-industry sector.
4) FAT UGM as an organizer of university tri-dharma, directed to be able to produce quality graduates with the following characteristics:
    a) Able to solve problems, develop, and implement knowledge and technology in their field.
    b) Able to communicate, build cooperation, and exhibit leadership and entrepreneurial spirit.
    c) Have a social spirit, and be responsible, ethical, and professional in their field.
5) FAT UGM carries out quality education using a designed curriculum that is consistent with the strategic plan, vision, mission, and goal of the faculty and stakeholder demand.
6) FAT UGM applying student-centred learning systems that direct students as long-life learners.
7) FAT UGM, in carrying out the learning process, always refers to leadership aspects (Leadership), stakeholders' demands (Relevance), and the creation of a conducive academic atmosphere (Academic atmosphere). Internal management, Sustainability, and Efficiency and Productivity (L-RAISE).
8) FAT UGM carries out an efficient and productive learning process to ensure that students complete their studies on time with high competence in accordance with the curriculum design and are competitive in the world of work.
9) FAT UGM organizes education professionally so it can compete at national and international levels with the following policies:
    a) Effective new student recruitment strategies through various promotion techniques, debriefing for new students, refreshments for students towards the end of their study period, and efforts to provide added value to new graduates.

b) Recruitment strategy for teaching staff through a standard, open, and transparent mechanism, as well as a development strategy to acquire teaching staff with high qualifications and reliability in accordance with the required field of knowledge and expertise.
c) Recruitment strategy for administrative staff and technicians through a standard, open, and transparent mechanism and its development strategy to acquire reliable professional staff as needed.
d) The strategy for procuring and providing infrastructure consists of physical facilities/facilities for lectures, practicum, research, library collection, information technology, and communication.
e) The Strategy for planning and developing educational programs involves user parties, professional associations, government, alumni, students, and other stakeholders.
f) The Strategy of planning and development of student teaching and learning processes.

10) FAT UGM organizes education with an emphasis on achieving learning outcomes in terms of cognitive skills, practical skills, advanced studies or entry into the world of work, and self-development. It always involves recent developments in teaching and learning techniques, research, and other relevant developments from work and professionals.
11) FAT UGM implements an Academic Quality Assurance System to guarantee and ensure the high quality of the learning process and the graduates' results.

2.2. Policy Directions in the Field of Education

1) Mission and Objectives
   a) Carrying out academic education in the field of agricultural technology in a professional manner to produce high-quality undergraduate and postgraduate graduates who are capable of contributing to the realization of a knowledge-based society.
   b) Carrying out academic education in agricultural technology based on the academic quality assurance system.
   c) Providing adequate physical and academic infrastructure to actualize the quality learning process.

2) Education Programs
   a) Encouraging and facilitating the Department to always increase the interest and quality of prospective students through a promotion system in high schools, industry, government, research institutes, and society.
   b) Optimizing the campus introduction study orientation program as a place for improving new students' success skills and leadership.
   c) Give awards to new undergraduate students with English proficiency equivalent to TOEFL ≥ 500 in the form of awarding an A grade without attending English courses.

d) Directing and facilitating the Department to develop the Research-Based Learning (RBL) system with an emphasis on the formation of students as active learners (Student-Centered Learning, SCL) and the graduates who have an attitude as long-life learners (Longlife student).
e) Directing and facilitating the Department in developing the Competency-Based Curriculum and Problem-Based Learning (PBL) or Outcome Based Education (OBE).
f) Facilitating the Department in preparing each course's Semester Learning Activity Program Plan (courses Syllabus).

3) Resources
a) Implementing a lecturer acceptance system in an open, objective and competitive manner based on high competence criteria, good character, and high integrity.
b) Providing a conducive climate for lecturers and staff to develop competencies that support their duties.
c) Providing physical and academic facilities that encourage the formation of an excellent academic atmosphere for lecturers, students, and employees.
d) Implement an Information and Communication Technology (ICT) based academic information system.

4) Programs Evaluation
a) Implement and develop an evaluation system for the periodic and structured implementation of educational programs by the Faculty, Department, Study Program, and Laboratory.
b) Facilitate the Department in conducting Study Evaluation Programs based on a Self-Evaluation every semester.

5) Institutional
a) Implementation and development of quality educational processes administratively coordinated by the Deputy Dean for Academic and Student Affairs and operationally formulated and carried out by the Department in a transparent and accountable manner.
b) The organizers of academic activities are the faculty and department.

2.3. Policy Directions in the Field of Research

1) Mission and Objectives
a) Carry out research in the field of agricultural technology professionally so that it can produce high-quality bachelor's, master's, and doctorates who are able to participate in actualizing the vision of the university as an international research university.

b) Carry out research in the field of agricultural technology based on the research quality assurance system
c) Provide adequate physical and academic infrastructure for the implementation of quality research.

2) Research Programs
a) Improve the quality of lecturer and student research through collaboration between inter-universities, industry, research institutes, government and society.
b) Direct and facilitate the Department's development of the RBL system, with an emphasis on forming students as active learners (SCL) and graduates who have an attitude of long-life learners (long-life learners).
c) Direct and facilitate the department's research development, oriented towards increasing added value and developing knowledge and technology.

3) Resource
a) Improve research facilities in each laboratory through the *Rencana Kerja Anggaran dan Tahunan* (RKAT) (Budget and Annual Work Plan) funding scheme and research collaboration with external stakeholders.
b) Encourage the formation of lecturer-student interaction in conducting research.
c) Increase the availability of scientific journals and internet networks to be accessed by lecturers and students to make proposals, carry out research, and prepare research reports.
d) Encourage resource sharing between laboratories to be used by all lecturers and students.

4) Programs Evaluation
a) Implement and develop a periodic and structured evaluation system for research program implementation at the faculty, department, study program, and laboratory levels.

5) Institutional
a) The implementation and development of research quality is operationally formulated and carried out by the Department in a transparent and accountable manner by considering input from internal and external stakeholders.

2.4. Policy Directions in the Field of Community Service

1) Mission and Objectives
a) Organizing community service initiatives in the field of agricultural technology with professionalism, aiming to foster the growth of a knowledge-based society.

b) Organizing community service initiatives in the field of agricultural technology in accordance with a quality assurance system for community service.
c) Providing sufficient physical and academic infrastructure to support the establishment of a high-quality community service process.

2) Community Service Program
a) Enhancing the quality of community service through collaboration with local governments, industries, and community members.
b) Directing and facilitating the Department in developing Research-Based Community Service Systems (RBCS).
c) Guiding and facilitating the Department in advancing community service initiatives oriented towards the realization of a knowledge-based society.
d) Encouraging the establishment of meaningful interactions among lecturers, students, and community members in carrying out community service activities through Thematic *Kuliah Kerja Nyata (KKN)* (Community Service Programs) focused on specific themes required by the community.

3) Resource
a) Enhancing community service facilities through RKAT funding schemes and collaborations with external stakeholders.
b) Increasing the availability of appropriate technological information in the field of agricultural technology to ensure accessibility for lecturers and students in carrying out community service activities.
c) Encourage the use of resources-sharing facilities between departments, which will be used by all lecturers and students in conducting community service.

4) Programs Evaluations
a) Implementing and developing a structured and periodic evaluation system for community service programs at various levels, including the Faculty, Department, Study Program, and Laboratory.

5) Institutional
a) The execution and improvement of community service quality are managed operationally by the Department in a transparent and accountable manner, taking into consideration feedback from both internal and external stakeholders.

2.5. Principles of Education Implementation

The principle of organizing faculty academic activities is the main principle that forms the basis for planning, implementing, monitoring and evaluating academic activities, which includes:

1) The Principle of Accountability states that all implementation of academic policies must be scientifically and openly accountable and refers to the latest dynamic scientific developments.
2) The Principle of Transparency states that academic policies are carried out openly, based on clear arrangements and rules that are always oriented towards mutual trust, to implement a conducive academic environment and ensure the realization of synergism.
3) The Principle of Quality Principle states that academic policies are implemented by continuously prioritizing input, processes, and output quality.
4) The Principle of Togetherness states that academic policies are carried out consistently, comprehensively, structurally, and systematically to align with the interests of the faculty and institution, based on clear and measurable objectives to achieve maximum effectiveness and efficiency.
5) The Principle of Societal states that academic policies are community-oriented by ensuring that the academic program benefits society broadly and remains aligned with the nation's ideals.
6) The Principle of Law states that all parties involved directly or indirectly in academic life must comply with applicable laws whose enforcement is guaranteed by the state.
7) The Principle of Benefit states that academic life is organized to benefit the nation, state, institutions, and all academicians.
8) The Principle of Equality states that academic policies are implemented based on equal rights to ensure an egalitarian academic environment.
9) The Principle of Independence states that the implementation of academic policies is always based on the institution's capacity, leveraging all available potential and resources to optimize the institution's continuously developing abilities in a systematic and structured manner.

2.6. Academic Quality Assurance Policy

1) Develop Academic Documents consisting of Academic Policies, Academic Standards, and Academic Regulations for education, research, and community service activities.
2) Create ISO 9001:2015-based Quality Management System Document consisting of the Quality Manual, Procedure Instructions, Records, and Forms for education, research, and community service activities.
3) Establish a Quality Assurance System Organization consisting of lecturers and staff members.
4) Conducting one quality assurance cycle of education, research, and community service for one academic year
5) Follow up on *Audit Mutu Internal (AMI)* (Internal Quality Audits) results to continuously improve the quality of education, research, and community service.

CHAPTER III. INSTITUTIONS AND RESOURCES

3.1. History and Development

FAT at UGM originated from discussions held by the Teaching Council in the early 1960s at the Faculty of Agriculture and Forestry, UGM. These discussions were in response to instructions from the Ministry of Higher Education and Science, which aimed to split the Faculty of Agriculture and Forestry into three faculties to increase the ratio of exact sciences to social humanities faculties. As part of this initiative, a preparatory team was formed to prepare the establishment of FAT UGM, which was tasked with defining agricultural technology, designing curricula, appointing teaching staff, and organizing student data.

The entities within the Faculty of Agriculture and Forestry, UGM, which were integrated to form FAT, consisted of the Department of Agricultural Technology with its subdivisions and the Department of Agricultural Culture Engineering with its subdivisions. The Biochemistry Section within the Faculty of Agriculture and Forestry was not incorporated into FAT.

FAT UGM was established by a team comprising Ir. Kamarijani, Ir. Soenjoto Soemodihardjo, Ir. Moch. Adnan, Ir. Hendro Pawoko Sajid, Ir. Soeharsono Martoharsono, Ir. Amien Hidayat, Ir. Hardiman, Ir. Moch. Roesdi, Ir. Soemangat, Ir. Pratjojo, Ir. Salam, Ir. Soenarto Pronohadiprodjo, and Ir. Pamudji*. Subsequently, on February 6, 1966, FAT at UGM officially graduated its first cohort of students.

The structural organization of the faculty has evolved over time in line with government policies and regulations. Initially, FAT UGM consisted of the Agricultural Technology Division and the Agricultural Mechanization Division. The Agricultural Technology Division included several programs: Basic and Raw Material Technology, Vegetable and Fruit Technology, Animal Material Technology, Industrial Microbiology, and Other Food Material Technology. Meanwhile, the Agricultural Mechanization Division included Soil and Water Conservation Technology and the Agricultural Tools and Machinery.

In 1967, changes were made to the departmental structure. The Agricultural Technology Division was reorganized into four programs: Hard Plant Technology, Young Plant Technology, Animal Material Technology, and Industrial Microbiology. Similarly, the Agricultural Mechanization Division was restructured to include Soil and Water Conservation Technology and Power and Agricultural Machinery Technology. By 1978, the name of the Agricultural Technology Division was changed to the Agricultural Product Processing Division, while the Agricultural Mechanization Division remained unchanged. Over time, the individual departments within these divisions were removed in line with the implementation of the credit-based education system.

In accordance with Government Regulation No. 5/1980, the “divisions” were restructured into “programs”. As a result, in 1980, FAT UGM was reorganized to include the Agricultural Product Processing Program and the Agricultural Mechanization Program. In 1986, a new program, Industrial Agricultural Technology, was established. By 1995, the Agricultural

Product Processing Program was renamed Agricultural Product Processing Technology. Subsequently, based on Rector Decree No. 18/P/SK/HTKL/2000 dated January 11, 2002, this program was renamed again to Food and Agricultural Product Technology.

In 2016, additional changes were implemented following Rector Regulation No. 809/P/SK/HT/2015 concerning the Organizational Structure and Governance of Faculties at UGM. Specifically, the term "Program" replaced "Department" Concurrently, one of the programs at FAT, Agricultural Engineering, was renamed Agricultural and Biosystems Engineering.

Initially, FAT UGM was located at SEKIP Jl. C Simanjuntak, Yogyakarta, shares a building with the Faculty of Agriculture and the Faculty of Forestry, UGM. At that time, the faculty had only limited space designated as laboratories, while the Mechanization Division was located in Bulaksumur near the UGM Central Administration Building. These laboratories were used to support various practical and research activities for students. Some lectures and practical activities were held in collaboration with the Faculty of Agriculture and the Faculty of Forestry. Practical sessions were conducted in locations such as Dalem Mangkubumen Ngasem, which housed facilities for Botany, Zoology, Inorganic Chemistry, and Organic Chemistry, as well as in a building near the Pingit campus for Mineralogy practicals.

In 1967, FAT relocated to a building in Karangmalang (now Yogyakarta State University). The building was an administrative office and classrooms for faculty activities and some lectures, while laboratory-based practical activities were conducted elsewhere.

By 1968, the Faculty relocated again to a new building in Bulaksumur, situated east of the UGM Administration Center Building, where it currently stands. Initially, the building in Bulaksumur comprised only a few rooms and was primarily used for faculty management and administration, with very few designated for laboratories and lectures. Over time, this building underwent gradual expansion, which brought about the construction of additional rooms, each serving various distinctive purposes, including a library, administrative offices, teaching bureau, finance department, Dean and Assistant Dean offices, laboratories (including Lab. Chemistry & Biochemistry Processing), pilot-plant facilities, and lecture rooms.

FAT UGM received a new building spanning approximately 2000 m^2 in area in 1986. The new addition consisted of two units, comprising two and three floors respectively. After the commissioning of this building, there has been no need for the Faculty to utilize other buildings for educational and administrative activities. Subsequently, in 1993, an additional three-story building was annexed to the former lecture building of the Faculty of Non-Degree Technology. In this regard, FAT UGM comprises several buildings dedicated to various functions and activities. The faculty comprised five distinct units designated as Unit I (one floor), Unit II (one floor), Unit III (two floors), Unit IV (three floors), and Unit V (three floors), all of which underwent significant changes. In September 2000, Units I and II were demolished, paving the way for a new six-story building funded by a soft loan from the Overseas Economic Cooperation Fund (OECF). This new structure assumed the roles of the

old buildings by housing laboratories, lecture and examination rooms, seminar rooms, offices, libraries, and other facilities. Accordingly, the groundbreaking ceremony for the building took place on June 6, 2001, and was inaugurated for use at the commencement of the academic year in September 2003/2004.

During the early establishment of FAT UGM, the curriculum consisted of a packaged system, with the educational process divided into three stages. The first stage, called the "propadeuse" level, lasted one year. At this level, students who successfully completed their studies may participate in the next stage and receive a propadeuse diploma without a degree, while those who did not pass were required to repeat the stage. The second stage, known as the Bakaloreat level, lasted for two years. Students who successfully completed this stage may participate in the next stage and earn a bakaloreat diploma and were entitled to use the title "B.Sc." (Bachelor of Science). Subsequently, the third stage, the doctoral level, extended over two years, and the students who successfully completed this stage were considered graduates of FAT UGM and were awarded a doctoral diploma. In this regard, these students were allowed to use the title "Ir" (engineer). Graduates could pursue further education, including master's or doctoral programs. The educational system utilized an absolute and closed assessment method to evaluate the academic progress of the students (graduation). This system informed students only of their pass or fail status for course examinations, with no specific grades provided. The system remained in place until the 1977/1978 academic year.

In the 1978/1979 academic year, the FAT education system underwent a significant transformation. The previous 5-year curriculum was replaced with a 4-year curriculum, which was referred to as stratum one (S-1) education. This change marked the abolition of distinct levels or stages such as propadeuse education, bakaloreat education, or doctoral education. As a result, the package system gave way to a more flexible credit system, allowing students to choose their courses from various offerings. Under this new credit system, students had the liberty to select their courses, and their learning outcomes were assessed using letter grades, including A, B, C, D, and E, denoting excellent, good, sufficient, deficient, or failing performance. The assessment processes became transparent, and students were considered to have completed their studies if they had successfully accumulated a minimum of 160-semester credit units with a specific Grade Point Average (GPA) requirement (2.0) and the degree awarded upon completion of this program remained "Ir". Furthermore, this credit-based curriculum featured various areas of specialization. For instance, in the Agricultural Products Processing Section, the curriculum was divided into two specialization areas: Food Science and Technology and Plantation Technology. In the Agricultural Mechanization Section, the curriculum offered three distinct specializations: Agricultural Power and Machinery, Agricultural Product Processing Engineering, and Soil Preservation and Water Management Engineering. Students were granted a maximum of 9 years to complete their studies, and those who exceeded this limit faced expulsion from FAT.

However, in 1983, specialization was abolished and replaced with Study Programs, which served the same purpose as specializations. The Agricultural Product Processing curriculum consists of the Food Technology and Nutrition Study Program, the Agricultural Product Processing Technology Study Program, and the Food Biotechnology Study Program. The Agricultural Mechanization curriculum comprises two distinct study programs: Agricultural Power and Machinery and Soil and Water Engineering. However, in 1986, when the Department of Agro-Industrial Technology was established, it initially had only one Study Program, which was Agro-Industrial Technology. The differentiation between the Program and the Study Program was not clearly defined during this period. It was only in 1989 that a significant overhaul in the education system occurred. This overhaul included altering the number of credits required to complete S-1 education at FAT UGM which was reduced to approximately 140 - 150 credits. The title "Ir." was replaced with "*Sarjana Teknologi Pertanian*" (S.T.P.) (Bachelor of Agricultural Technology), and a clearer distinction between the Program and the Study Program was also emphasized. In this regard, the Program was recognized as an academic entity within the faculty responsible for delivering academic and/or professional education in a specific branch of science or technology. However, the Study Program represented a field of study focused on a particular branch of science or technology to cultivate unique and specific expertise. Each Program was responsible for managing one Study Program. The Food Technology and Agricultural Products Program hosted the Food and Nutrition Study Program, the Agricultural Mechanization Program oversaw the Agricultural Mechanization Study Program, and the Agro-Industrial Technology Program managed the Agro-Industrial Technology Study Program.

With the enactment of the 1992 National Curriculum, the Food and Nutrition Study Program in the Agricultural Product Processing Program changed to the Agricultural Product Processing Study Program. Furthermore, subsequent changes occurred with the implementation of Kurnas 1996. The Agricultural Product Processing Technology Program transformed into the Agricultural Product Technology Study Program. The Agricultural Engineering Program was also restructured into the Agricultural Engineering Study Program. This newly formed program comprises three distinct interests: Agricultural Product Engineering, Agricultural Power and Machinery, and Agricultural Natural Resources Engineering. On the other hand, the Study Program within the Agro-Industrial Technology Program remained unchanged.

In February 2002, the Agricultural Product Technology Study Program underwent a modification, which led to its name change to the Food and Agricultural Product Technology Study Program. Meanwhile, the names of the other two study programs remained unchanged. In 2002, there was a curriculum transition from the 1996 Curriculum to the 2002 Curriculum. Under the new curriculum, the graduation requirements for undergraduate (S-1) students were readjusted to range from 144 to 160 credits.

In line with UGM Rector Decree No. 22/P/SK/HT/2006, dated January 26, 2006, which provided guidelines for the development of undergraduate study program curricula, all the undergraduate study programs underwent a transformation to adopt a Competency-Based Curriculum starting from September 2006/2007. The graduation requirement for undergraduates was set at 144 - 148 credits. All study interests within the Agricultural Engineering Study Program were eliminated during this transition. A significant paradigm shift also occurred in the learning system, transitioning from Teacher-Centered Learning (TCL) to SCL, in which learning no longer revolved solely around lecturers. Instead, it shifted to a student-centred model, where students took on a more active role as learners and lecturers acted as guides and facilitators, partnering with students to pursue and develop knowledge. In this regard, the validity of the Competency-Based Curriculum was strengthened through a series of enhancements outlined in Universitas Gadjah Mada Rector Decree No. 581/P/SK/HT/2010, issued on October 1, 2010, regarding general guidelines for the preparation of the 2010 curriculum for undergraduate study programs at UGM.

As stipulated in the Academic Regulations outlined in the FAT UGM 2021-2026 Academic Document Book, Article 36 regarding Curriculum Quality Assurance states that "the curriculum in each study program must be evaluated periodically at least once every five years by involving various stakeholders, including community/users, graduates/alumni, students, and relevant academic entities. In accordance with these regulations, a revision of the 2016 Curriculum took place in 2021. This revision has been implemented for five years at the Faculty of Agricultural Technology, and its outcome was the development of the 2021 Curriculum, which is now applicable to all Postgraduate Study Programs. This revised curriculum incorporates key elements such as the Indonesian National Qualifications Framework, OBE, and the opening of a by-research pathway to complement the regular path. The 2021 Curriculum is currently utilized for all postgraduate study programs at the faculty.

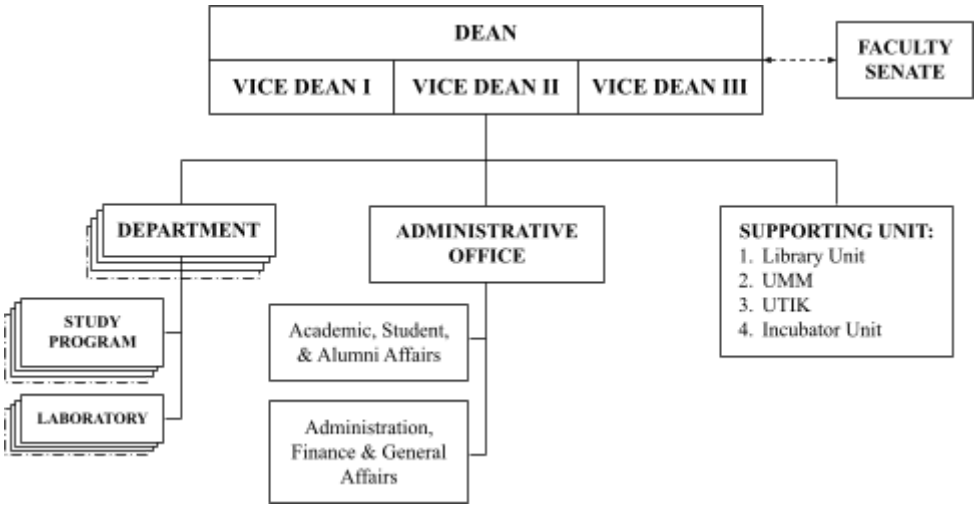
3.2. Institutional Structure

As stated in Government Regulation No. 60/1999 article 45, the organizational structure of the faculty consists of (1) Leadership Elements such as Dean and Assistant (Vice) Dean, (2) Faculty Senate, (3) Academic Executives including Departments, Laboratories, and Lecturer Groups, and (4) Administrative Executives (Administration Department). Accordingly, in order to foster the smooth running of academic administration, FAT UGM incorporated an Academic and Student Affairs Section.

Starting from January 1, 2000, UGM experienced a significant transformation, which included its transition into a State-Owned Legal Entity University in accordance with Government Regulation No. 153/2000. This change marked the beginning of a series of gradual adjustments across various domains, comprising university-wide and faculty-level organizations. Subsequently, with the implementation of Government Regulation No. 58 of 2013, which pertains to the Forms and Funding Mechanisms of Legal Entity State Universities,

the status of the university shifted to that of a Legal Entity State University. This transition had significant implications, particularly regarding alterations in the financial management system and all aspects related to funding for educational activities at UGM.

The organizational structure of the FAT is presented in Figure 3.1. In order to oversee the management of Study Programs, which comprise S1, S2, and S3 programs, a dedicated organizational framework was developed, as shown in Figure 3.2. In this context, the leadership of the postgraduate study program was entrusted to the Head of the Study Program, who reports to the Dean through the Head of the Department.



Descriptions:

Vice Dean I	:	Vice Dean for Academic and Student Affairs	UMM	:	Quality Management Unit (QMU)
Vice Dean II	:	Vice Dean for Finance, Assets, Human Resources, and Information Systems	UTIK	:	Information & Communication Technology Unit (ICTU)
Vice Dean III	:	Vice Dean for Research, Community Service, Cooperation and Alumni			

Figure 3-1. Structural Organization Chart of the Faculty of Agricultural Technology

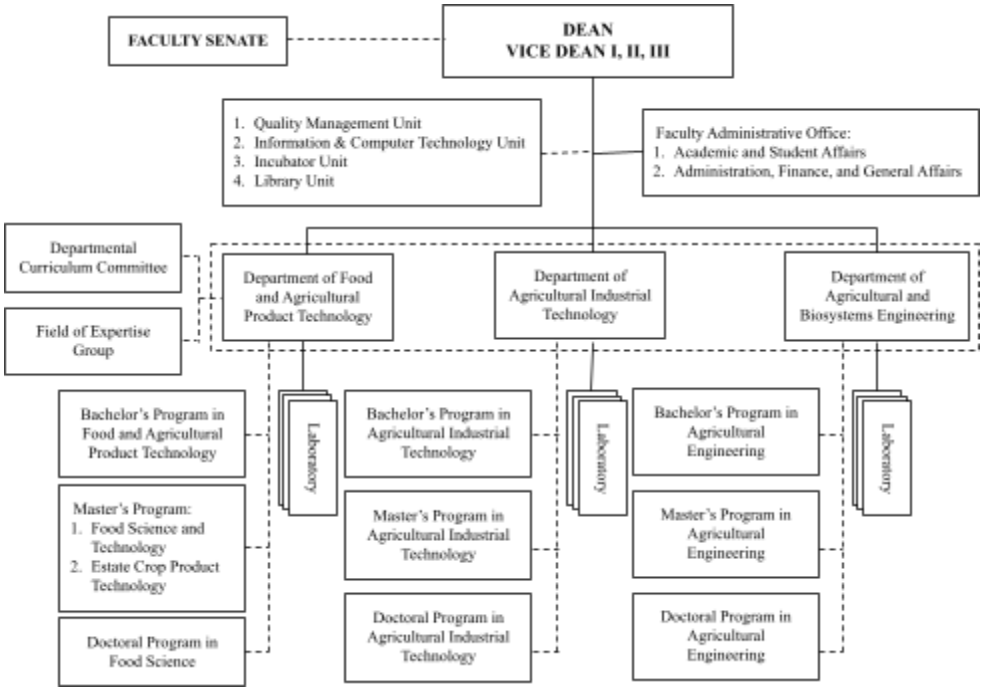


Figure 3-2. Functional Organization Chart of Study Program Management

a. Faculty Senate

In accordance with Government Regulation No. 153/2000, the Faculty Senate serves as the highest normative and representative body within the faculty. Its primary role includes the authority to formulate university policies and regulations specific to the respective faculty. The key tasks of the Faculty Senate, as outlined in Government Regulation No. 153/2000 and UGM Statutes, are outlined as follows:

1) Formulating academic plans and policies of the faculty.
2) Assessing the achievements and academic ethics, skills, and personality integrity of lecturers in the faculty.
3) Formulating norms and benchmarks for the implementation of faculty administration and assessing the implementation of the duties of faculty leaders.
4) Providing opinions and suggestions for the smooth management of the faculty.
5) Organizing the election of the dean.
6) Considering the nomination of the Vice Dean, Head of Department, Secretary of Department, Head of Laboratory, Head of Study Program, and Secretary of Study Program to the Dean.
7) Discusses the annual report of the faculty leadership that will be submitted to the university.
8) Approving the establishment (opening) or dissolution of study programs, laboratories, studio

The Senate is led by a lecturer who fulfils the specified criteria, and this individual is accompanied by a Senate Secretary. Furthermore, the Chairman and Secretary of the Senate are elected from among the Senate members, which comprises professors, emeritus professors, extraordinary professors, faculty leaders (Deans and Vice Deans), Heads of Departments, and Department Representatives (lecturers). It is also important to clarify that the number of Department Representatives is determined in proportion to the number of lecturers within the respective Department, with one representative for every ten lecturers.

The leadership of the Senate of FAT for the 2021–2026 term was established through the Decree of the Chancellor of UGM Number 1001/UNI.P/KPT/HUKOR/2021, concerning the Chairperson of the Senate of FAT for the 2021–2026 term, and the Decree of the Chancellor of UGM Number 1028/UNI.P/KPT/HUKOR/2022, concerning the Interim Secretary of the Senate of FAT for the 2021–2026 term, dated September 22, 2022. The composition of the Senate leadership of FAT is as follows:

Chairman : Prof. Dr. Ir. Umar Santoso, M.Sc.
Secretary : Prof. Dr. Ir. Bambang Purwantana, M.Agr.

b. Academic Executive

According to Government Regulation No. 60/1999 Articles 45, 50 and 51, the academic executing elements in the Faculty other than the Faculty Leaders are Department Leaders, Heads of Laboratories/Studios, Lecturer Groups, and Study Programs.

Faculty Leaders

FAT is overseen by a Dean responsible for coordinating the implementation of the Tridharma of Higher Education (education, research, and community service), fosters the academic community within the Faculty (lecturers, students, and educational staff), manages the administrative functions of the Faculty and is accountable to the Chancellor. To support these responsibilities, the Dean is aided by three Vice Deans: (1) Vice Dean I, responsible for Academic and Student Affairs; (2) Vice Dean II, responsible for Finance, Assets, Human Resources, and Information Systems, and (3) Vice Dean III, responsible for Research, Community Service, Cooperation, and Alumni matters. The Vice Deans directly report to and collaborate with the Dean in fulfilling their duties.

The Executive Elements of FAT for 2021 - 2026 are presented in Table 3-1.

Table 3-1. The Leadership of FAT UGM

No.	Structural Position	Name of Official	Period
1	Dean	Prof. Dr. Ir. Eni Harmayani, M.Sc.	2021-2026
2	Vice Dean for Academic and Student Affairs	Prof. Dr. Yudi Pranoto, S.T.P., M.P.	2021-2026
3	Vice Dean for Finance, Assets, Human Resources and Information Systems	Prof. Dr. Kuncoro Harto Widodo, S.T.P. M.Eng.	2021-2026
4	Vice Dean for Research, Community Service, Cooperation and Alumni	Dr. Sri Rahayoe, S.T.P., M.P.	2021-2026

Department and Study Program Leaders

Departments within faculties serve as the academic units responsible for delivering education in specific fields of science, technology, or the arts, as outlined in PP number 30 of 1990. It is important to comprehend that a Department comprises key components, including its leadership (Department Head and Secretary), academic staff (lecturers), and physical resources such as laboratories. FAT UGM houses three distinct Departments: the Department of Food and Agricultural Products Technology, the Department of Agricultural and Biosystem Engineering, and the Department of Agricultural Industrial Technology. The leadership elements at the Department level within the Faculty of Agricultural Technology are presented in Table 3-2.

Table 3-2. Department-Level Leadership Elements at the Faculty of Agricultural Technology, UGM

No.	Structural Position	Name of Official	Period
1	Head of FAPT Department	Prof. Dr. Ir. Tyas Utami, M.Sc.	2021-2026
2	Secretary of FAPT Department	Dr. Dwi Larasatie Nur Fibri, S.T.P., M.Sc.	2021-2026
3	Head of the ABE Department	Prof. Dr. Ir. Lilik Sutiarso, M.Eng.	2021-2026
4	Secretary of the ABE Department	Dr. Arifin Dwi Saputro, S.T.P., M.Sc.	2021-2026
5	Head of the AIT Department	Dr. Ir. Didik Purwadi, M.EC.	2021-2026
6	Secretary of the AIT Department	Mohammad Affan Fajar Falah, S.T.P.,M.Agr., Ph.D.	2021-2026

In accordance with Decree No. 234/U/2000 issued by the Minister of National Education, a Study Program serves as a structured educational unit, which is outlined in a study plan, to provide guidance for the execution of academic and/or professional education which approach based on a defined curriculum to equip students with the

requisite knowledge, skills, and attitudes in line with the objectives of the curriculum. The Study Program is a specialized field of study within a specific area of science, technology, and/or art, allowing students to attain expertise in a specifically selected field. FAT has 10 study programs, as detailed in Table 3-3.

Table 3-3. Departments and Study Programs at the Faculty of Agricultural Technology, UGM

Department	Study Program	Degree	Description
Food and Agricultural Product Technology	1. Food and Agricultural Product Technology	Bachelor	Since 1963
	2. Food Science and Technology	Master	Since 1983
	3. Estate Crop Product Technology	Master	Since 1983
	4. Food Science	Doctor	Since 1999
Agriculture and Biosystems Engineering	5. Agriculture and Engineering	Bachelor	Since 1963
	6. Agriculture and Engineering	Master	Since 1983
	7. Agriculture and Engineering	Doctor	Since 1999
Agro-Industrial Technology	8. Agroindustrial Technology	Bachelor	Since 1986
	9. Agroindustrial Technology	Master	Since 2006
	10. Agroindustrial Technology	Doctor	Since 2019

The comprehensiveness of a Study Program comprises leadership (the Head and Secretary of the Study Program, which may be held by the Head or Secretary of the department at the Bachelor level), the curriculum structure, and the enrolled students. The Head of the Study Program is responsible for ensuring the quality of educational activities and the calibre of graduates produced. Both the Head of the Department and the Head of the Study Program report directly to the Dean. The Heads of Study Programs within FAT are presented in Table 3-4.

Table 3-4. Departments and Study Programs at the Faculty of Agricultural Technology, UGM

No.	Structural Position	Degree	Period
	Department of Food and Agricultural Product Technology		
1	Head of Food and Agricultural Product Technology	Prof. Dr. Ir. Tyas Utami, M.Sc.	2021-2026
2	Head of Food Science and Technology	Dr. Ir. Muhammad Nur Cahyanto, M.Sc.	2021-2026
3	Secretary of Food Science and Technology	Dr. Widiastuti Setyaningsih, S.T.P., M.Sc.	2021-2026
4	Head of Estate Crop Product Technology	Prof. Dr. Ir. Chusnul Hidayat	2021-2026
5	Head of Food Science	Prof. Dr. Ria Millati, S.T., M.T.	2021-2026
	Department of Agriculture and Biosystems Engineering		
6	Agriculture and Engineering	Prof. Dr. Ir. Lilik Sutiarso, M.Eng.	2021-2026
7	Agriculture and Engineering	Dr. Ir. Nursigit Bintoro, M.Sc.	2021-2026
8	Agriculture and Engineering	Dr. Rudiati Evi Masithoh, S.T.P., Dev.Tech.	2021-2026
	Department of Agroindustrial Technology		
9	Agroindustrial Technology	Dr. Ir. Didik Purwadi, M.EC.	2021-2026
10	Agroindustrial Technology	Anggoro Cahyo Sukartiko, S.T.P., M.Sc., Ph.D.	2021-2026
11	Agroindustrial Technology	Dr. Atris Suryantohadi, STP, MT.	2021-2026

Laboratory Leaders

FAT UGM, comprises a total of 16 laboratories, which are evenly distributed among its three Departments. Specifically, the Department of Food and Agricultural Product Technology houses 5 laboratories, the Department of Agriculture and Biosystems Engineering has 5 laboratories, and the Department of Agro-Industrial Technology maintains 6 laboratories. Following this, the Laboratory Heads are responsible for overseeing and guiding the advancement of scientific work within their respective fields in collaboration with their team of lecturers. Beyond laboratory resources, the Faculty of Agricultural Technology offers additional educational support facilities, including incubator units. A detailed overview of Laboratory Heads and Supporting Units within the Faculty of Agricultural Technology are presented in Table 3-5.

Table 3-5. Head of Laboratory and Graduate Competencies Supporting Unit at the Faculty of Agricultural Technology, UGM

No.	Laboratory	Head of the Laboratory	Period
Department of Food and Agricultural Product Technology			
1	Lab. of Chemistry, Biochemistry and Agricultural Products	Dr. Andriati Ningrum, S.T.P., M.Agr.	January 13, 2022 – January 31, 2025
2	Lab. of Food and Nutrition	Dr. Ir. Priyanto Triwitono, M.P.	as above
3	Lab. of Biotechnology	Rachma Wikandari, S.T.P., M.Biotech., Ph.D.	as above
4	Lab. of Process Engineering	Prof. Dr. Ir. Supriyadi, M.Sc.	as above
5	Lab. of Waste Management	Dian Anggraini Suroto, S.T.P., M.P., M.Eng., Ph.D.	March 17, 2023 – January 31, 2025
Department of Agriculture and Biosystems Engineering			
1	Lab. of Agricultural Machinery Energy	Dr. Ir. Radi, S.T.P., M.Eng., IPU, ASEAN Eng.	January 13, 2022 – January 31, 2025
2	Lab. of Land and Water Resources Engineering	Chandra Setyawan, S.T.P., M.Eng., Ph.D., IPM, ASEAN Eng.	as above
3	Lab. of Food and Postharvest Engineering	Dr. Ir. Devi Yuni Susanti, S.T.P., M.Sc., IPU, ASEAN Eng.	as above
4	Lab. of Biological Physics	Dr. Murtiningrum, S.T.P., M.Eng., IPM, ASEAN Eng.	as above
5	Lab. of Agricultural Building Environmental Engineering	Andri Prima Nugroho, S.T.P., M.Sc., Ph.D., IPU, ASEAN Eng.	as above
Department of Agroindustrial Technology			
1	Lab. of Management and System Industry	Dr. Novita Erma Kristanti, S.T.P., M.P.	January 13, 2022 – January 31, 2025
2	Lab. of System Analysis and Simulation	Dr. Agung Putra Pamungkas, S.T.P. M.Agr.	as above
3	Lab. of Industrial Design and Waste Control	Dr. Ir. Makhmudun Ainuri, M.Si.	as above
4	Lab. of Quality Analysis and Standardizations	TIP Derpartment's Secretary (Ex-Officio)	as above
5	Lab. of Bioindustry	Dr. Darmawan Ari Nugroho, S.T.P., M.P.	June 10, 2023 – January 31, 2025
6	Lab. of Production System	Dr. Nafis Khuriyati, S.T.P., M.Agr.	as above

Graduate Competencies Supporting Unit			
1	Incubator	Ir. Suharno, M.Eng., M.Eng.Sc.	January 2, 2023 – November 30, 2024

Administrative Officer

The administrative functions within FAT are managed by the Administration Department, which is led by the Head of the Administration Office and supported by two Section Heads, namely (1) the Academic and Student Affairs Section and (2) the Finance and General Administration Section. Each of these sections is further assisted by several executives who contribute to the smooth operation of administrative tasks. The administrative personnel of the FAT are as follows:

Head of Administration Office : Agung Wijayanto, S.E., M.Acc.
Head of Academic and Student : Nur Cahyati Wahyuni, S.Ant., M.Sc.
Head of Finance and General Administration : Indira Fauzia Basrawy, S.Sos., M.B.A.

Quality Management Unit

To ensure the effective implementation of academic policies, plans, and the ideals outlined in Academic Documents (including Policies, Standards, and Academic Regulations), the faculty established a Quality Management Mutu. This unit operates under the oversight of an academic quality assurance organization, with a Quality Manager Representative (QMR) serving as its chairperson. The QMR is responsible for reporting to the Dean and overseeing the proper execution of quality management processes and is assisted by an administrator. Within the academic period of 2024, the QMU personnel are as follows:

Chairman : Hanim Zuhrotul Amanah, S.T.P., M.P., Ph.D.
Administration : Hilaria Lestari Budiningsih, A.Md.

3.3. Human Resources

As of July 2024, the lecturers and education personnel (employees) of FAT UGM are presented below in Tables 3-6, 3-7, and 3-8.

Table 3-6. Lecturers of the Faculty of Agricultural Technology, UGM

No	Lecturer	Employee Identity Number
A. Department of Food and Agricultural Product Technology		
1	Prof. Dr. Ir. Endang Sutriswati Rahayu, M.S.	-
2	Prof. Dr. Ir. Retno Indrati, M.Sc.	195901101985032001
3	Prof. Dr. Ir. Umar Santoso, M.Sc.	195902171985031002
4	Prof. Dr. Ir. Djagal Wiseso Marseno, M.Agr.	195911221986121001
5	Prof. Dr. Ir. Supriyadi, M.Sc.	196012131986031001
6	Dr. Ir. Muhammad Nur Cahyanto, M.Sc.	196107051986031004
7	Dr. Ir. Priyanto Triwitono, M.P.	196112011987101001
8	Prof. Dr. Ir. Tyas Utami, M.Sc.	196204181986032001
9	Prof. Dr. Ir. Eni Harmayani, M.Sc.	196306091987102001
10	Prof. Dr. Ir. Sri Raharjo, M.Sc.	196307231986031001
11	Prof. Dr. Ir. Chusnul Hidayat	196409191994031002
12	Dr. Rini Yanti, S.T.P., M.P.	197105201999032001
13	Prof. Dr. Ria Millati, S.T., M.T.	197205152006042001
14	Prof. Dr. Yudi Pranoto, S.T.P., M.P.	197308261999031002
15	Bangun Prajanto Nusantoro, S.T.P., M.Sc.	197609031999031002
16	Dr.nat.techn. FMC Sigit Setyabudi, S.T.P., M.P.	197610142008121003
17	Dian Anggraini Suroto, S.T.P., M.P., M.Eng., Ph.D.	197801012005012001
18	Dr. Zaki Utama, S.T.P., M.P.	197806092002121004
19	Andriati Ningrum, S.T.P., M.Agr., Ph.D.	111198306201308201
20	Dr.rer.nat. Lucia Dhiantika Witasari, S. Farm., Apt., M. Biotech.	198406222015042003
21	Dr. Widiastuti Setyaningsih, S.T.P., M.Sc.	198407212012122002
22	Rachma Wikandari, S.T.P., M. Biotech., Ph.D.	198601262018032001
23	Yunika Mayangsari, S.Si., M.Biotech., Ph.D.	198606022020122013
24	Dr. Dwi Larasatie Nur Fibri, S.T.P., M.Sc.	198702262015042002
25	Dr. Arima Diah Setiowati, S.T.P., M. Sc.	198703252020122011
26	Aulia Ardhi, S.T.P., M. Sc.	111198709201802101
27	Andika Sidar, S.T.P., M.Biotech.	111198712201607201
28	Dr. Manikharda, S.T.P., M.Agr.	111198901202001201

29	Dr. Fiametta Ayu Purwandari, S.T.P., M.Sc.	111198907201607202
30	Wahyu Dwi Saputra, S.T.P., M.Agr.Sc., Ph.D.	111199106202204101
31	Dr. Qurrotul A'yun, S.T.P., M.Sc.	111199108201811201
32	Bambang Dwi Wijatniko, S.T.P., M.Agr.Sc., M.Sc.	199204032019031015
33	Andika Wicaksono Putro, S.T.P., M.Sc.	111199212201811102
34	Ana Kemala Putri Jauhari, S.T., M.T.	111199312201812201
35	Ardhika Ulfah, S.T.P., M.Sc.	111199309202101201
36	Ashri Nugrahini, S.T.P., M.Sc.	111199310202201201
37	Dr. Inasanti Pandan Wangi, S.T.	111199311202405201
38	Dr. Lulum Leliana, S.T.P.	111199507202402201
39	Stugestus Kurniawan Jati, S.T.P., M.Sc.	111199708202301101
B. Department of Agricultural and Biosystems Engineering		
1	Prof. Dr. Ir. Sigit Supadmo, M.Eng.	195205161980031002
2	Prof. Dr. Ir. Sahid Susanto, M.S.	195312211980031005
3	Prof. Dr. Ir. Bambang Purwantana, M.Agr.	196112161989031001
4	Prof. Dr. Ir. Lilik Sutiarso, M.Eng., IPU., ASEAN Eng.	196407071990031002
5	Dr. Ir. Nursigit Bintoro, M.Sc., IPU., ASEAN Eng.	196305251989031004
6	Dr. Joko Nugroho Wahyu Karyadi, S.T.P., M.Eng.	197001041998031001
7	Dr. Ir. Murtiningrum, S.T.P., M.Eng.,IPU, ASEAN Eng.	197009051997022001
8	Dr. Sri Rahayoe, S.T.P., M.P., ASEAN Eng.	197012311997022001
9	Dr. Ir. Rudiati Evi Masithoh, S.T.P., M.Dev.Tech., IPU, ASEAN Eng.	197305251999032002
10	Bayu Dwi Apri Nugroho, S.T.P., M.Agr, Ph.D, IPU., ASEAN Eng.	111197904201406101
11	Dr. Ir. Devi Yuni Susanti, S.T.P., M.Sc., IPU, ASEAN Eng.	197906082005012001
12	Hanim Zuhrotul Amanah, S.T.P., M.P., Ph.D., IPM.	198007092008012013
13	Dr. Ngadisih, S.T.P, M.Sc., IPM., ASEAN Eng.	198009072008122003
14	Dr. Ir. Radi, S.T.P., M.Eng., IPU, ASEAN Eng.	198110072015041001
15	Dr. Arifin Dwi Saputro, S.T.P., M.Sc., IPM, ASEAN Eng.	111198507201304102
16	Sri Markumningsih, S.T.P., M.Sc., Ph.D.	198603212014042001

17	Chandra Setyawan, S.T.P., M.Eng., Ph.D, IPM, ASEAN Eng.	198605082015041001
18	Ir. Andri Prima Nugroho, S.T.P., M.Sc., Ph.D, IPU, ASEAN Eng.	198607202015041001
19	Hanggar Ganara Mawandha, S.T., M.Eng., Ph.D.	111198811201811102
20	Dr. nat. techn. Rizki Maftukhah, S.T.P., M.Sc.	111198902201607201
21	Ansita Gupitakingkin Pradipta, S.T., M.Eng.	111198908201802202
22	Redika Ardi Kusuma, S.T.P., M.Si., IPP.	111199002201811101
23	Bayu Nugraha, S.T.P., M.Sc., Ph.D.	111199003201607102
24	Yudha Dwi Prasetyatama, S.T., M.Eng.	111199010201607101
25	Makbul Hajad, S.T.P., M.Eng., Ph.D., IPP.	111199011201812101
26	Ing. Rose Tirtalistyani, S.T., M.Agr.	111199203201811201
27	Siti Mariyam, S.T.P., M.Sc	111199311202101201
28	Aryanis Mutia Zahra, S.T.P., M.Si.	111199409202101201
29	Dr. Prieskarinda Lestari, S.T., IPM.	111199601202110201
30	Muhamad Khoiru Zaki, S.P., M.P., Ph.D., IPM.	111199304202201101
C. Department of Agroindustrial Technology		
1	Ir. Suharno, M.Eng., M.Eng.Sc.	195911071985031005
2	Dr. Ir. Makhmudun Ainuri, M.Si.	196004201988031001
3	Dr. Ir. Endy Suwondo, DEA.	196009281985031003
4	Dr. Ir. Wahyu Supartono	196306191988031003
5	Dr. Ir. Dyah Ismoyowati, M.Sc.	196310201989032001
6	Prof. Dr. Ir. Adi Djoko Guritno, M.SIE.	196311121988031002
7	Dr. Ir. Didik Purwadi, M.Ec.	196405111989031003
8	Dr. Ir. Guntarti Tatik Mulyati, M.T.	196503251992032002
9	Dr. Wagiman, S.T.P., M.Si.	196705121995121001
10	Dr. Atris Suyantohadi, S.T.P., M.T.	196809061997021001
11	Ir. Pujo Saroyo, M.Eng.Sc.	196901231993031004
12	Dr. Jumeri, S.T.P., M.Si.	197101011997021001
13	Prof. Dr. Kuncoro Harto Widodo, S.T.P., M.Eng.	197106021995121001

14	Dr. Henry Yuliando, S.T.P., M.M., M.Agr.	197107221998031002
15	Ibnu Wahid Fakhrudin Aziz, S.T.P., M.T.	197112151997021001
16	Dr. Nafis Khuriyati, S.T.P., M.Agr.	197408081999032002
17	Mohammad Affan Fajar Falah, S.T.P., M.Agr., Ph.D.	197504101999031001
18	Dr. Darmawan Ari Nugroho, S.T.P., M.P.	197709042002121001
19	Muhammad Prasetya Kurniawan, S.T.P., M.Sc.	198009082005011002
20	Dr. Novita Erma Kristanti, S.T.P., M.P.	198011102008122002
21	Anggoro Cahyo Sukartiko, S.T.P., M.P., Ph.D.	198101202010121005
22	Prof. Dr. Mirwan Ushada, S.T.P., M.App. Life Sc.	198105182009121003
23	Dr. Agung Putra Pamungkas, S.T.P., M.Agr.	198403282012121002
24	Arita Dewi Nugrahini, S.T.P., M.T., Ph.D.	198601102015042001
25	Moh. Wahyudin, S.T.P., M.Sc.	198606232015041001
26	Megita Ryanjani Tanuputri, S.T.P., M.Sc., Ph.D	199206082024062004
27	Imam Bagus Nugroho, S.Si., M.Sc.	111198812202201101
28	Annisa Dwi Astari, S.T.P., M.T.	111199103201607201
29	Rosa Amalia, S.T.P., M.Sc.	111199401202101201
30	Sintia Putri Pradita, S.T.P., M.Sc.	111199405202201202
31	Shafira Wuryandani, S.T.P., M.Sc.	111199406202101201
32	Rendayu Jonda Neisyafitri, S.T.P., M.Sc.	111199602202101201
33	Thalia Naziha, S.T.P., M.Sc., M.B.A.	111199708202301201

Table 3-7. Qualifications of Lecturers at the Faculty of Agricultural Technology, UGM

No.	Position or Education	Number of Permanent Lecturers assigned to the Department			Total in Faculty	Percentage (%)
		Department TPHP	Department TPB	Department TIP		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. Functional Position						
1	Lecturer	11	2	6	19	19
2	Expert Assistant	2	6	3	11	10
3	Assistant Professor	8	11	14	33	32
4	Associate Professor	7	7	7	21	20
5	Professor	11	4	3	19	19
Total		**39**	**30**	**33**	**102**	**100**
B. Highest Education						
1	Undergraduate	0	0	0	0	0
2	Graduate/ Profession/ Sp-1	10	6	12	28	27
3	Postgraduate/ Sp-2	29	24	21	75	73
Total		**39**	**30**	**33**	**102**	**100**
C. Civil Servant (PNS) and Non-Civil Servant (Non PNS) Lecturer						
1	Civil Servant (PNS)	24	14	25	63	61
2	Non- Civil Servant (PNS)	15	16	8	40	39
Total		**39**	**30**	**33**	**102**	**100**

Table 3-7. Qualifications of Lecturers at the Faculty of Agricultural Technology, UGM

No.	Types of Academic Staff	Number of Academic Staff with Last Education										Total	(%)
		S3	S2	S1	D4	D3	D2	D1	SLTA	SMP	SD		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Librarian	0	1	0	0	1	0	0	0	0	0	2	3
2	Laborer/Technician/ Analyst/Operator/ Programmer	0	0	10	0	2	0	0	17	0	0	29	40
3	Administration	0	3	16	0	3	0	0	12	0	0	34	46
4	Others: security, guards, cleaners, waiters, drivers, etc	0	0	0	0	0	1	0	5	2	0	8	11
Total		0	4	26	0	6	1	0	34	2	0	73	100

3.4. Learning and Research Infrastructure

The infrastructure supporting the learning and research processes includes office buildings, lecture rooms equipped with computers, LCDs, air conditioners, and whiteboards, laboratories for both research and practical work, libraries, discussion rooms, examination facilities, and field laboratories located in Kalitirto, Brebah, Sleman, Yogyakarta.

3.4.1. Office Building

FAT building comprises four units with a combined area of 17,950 square meters. This space is utilized for various purposes, including administrative offices such as the Dean's office, the Faculty Senate, and the Academic Administration. Additionally, the building houses lecture rooms, laboratories, libraries, courtrooms, areas for oral discussions and examinations, seminar rooms, function rooms, and spaces designated for student activities. The areas of some of the main spaces are presented in Table 3-9.

Table 3-9. The Area of Several Office Rooms and Learning Support Spaces

No.	Room Usage	Number of Rooms	Total Area (m^2)
1	Dean’s Office	1	100
2	Academic Senate Room	1	20
3	Department Board Room	3	150
4	Faculty Council Room	1	100
5	Department Council Room	3	150
6	Administrative Office	1	323
7	Collaboration and Alumni Meeting Room	1	29
8	Large Seminar Room	1	400
9	Medium Seminar Room	3	280
10	Small Seminar Room	6	210
11	Small Examination Room	13	120
12	Lecture Room	1	1042
13	Multipurpose Room (Auditorium)	1	400
14	Library	1	400
		Total	**3.724**

3.4.2. Lecture Facilities

The number of students attending each course can vary significantly. courses offered to new students in their first year (Year I) have more participants, ranging from 100 to 150 students, as they are considered compulsory. However, elective courses tend to have fewer participants. To accommodate these varying class sizes FAT provides lecture rooms with diverse capacities, ranging from 25 seats to 200 seats, in sufficient quantity. All lecture rooms are equipped with essential facilities, including whiteboards,

overhead projectors, LCDs, air conditioners, internet-connected computers, wireless internet access (Wi-Fi), and larger lecture rooms are also equipped with a sound system.

3.4.3. Laboratory

The laboratories at FAT serve a dual purpose. First, research aimed at advancing scientific knowledge, and second, plays a crucial role in enhancing students' practical skills (psychomotor) during their education. The faculty comprises a total of 16 laboratories and one incubator unit. These facilities are instrumental in preparing students for the challenges of the professional world (such as interview techniques, crafting application letters, personality development, psychometric tests, and more). The laboratories at FAT include:

1) **Chemistry, Food Biochemistry, and Agricultural Products Laboratory**
   It focuses on advancing the sciences related to various chemical aspects, such as chemical analysis, post-harvest physiology and technology, food additives, applied food chemistry, and biochemistry. It also conducts quality tests for food and other agricultural products, specifically emphasising chemical aspects.

2) **Biotechnology Laboratory**
   It focuses on advancing the sciences related to biological-microbial aspects, such as microbiological analysis of agricultural products, fermentation processes, microbial enzymes, isolation and identification of microorganisms, industrial microbiology, food microbiology, and processing, as well as addressing challenges related to agricultural waste management and genetic engineering.

3) **Food and Nutrition Laboratory**
   It focuses on advancing the sciences related to nutrition, such as in vitro nutrition, bioassay techniques, food nutrition evaluation, community nutrition studies, experimental nutrition, and various other related fields. Furthermore, the laboratory features a sensory testing room as a facility for organoleptic assessments.

4) **Process Engineering Laboratory**
   It focuses on advancing the sciences related to physical aspects, such as physical properties, water activity, engineering processes kinetics, agricultural product processing plant design, processing equipment development, and enhancing food and agricultural product technologies. This laboratory has a "pilot plant" as a valuable resource for developing, processing, and handling technologies for various food commodities and agricultural products. Some examples of units within this pilot plant include oil refining, soy milk processing, smoking unit, fruit juice processing, essential oil distillation units, etc.

5) **Waste Management Laboratory**
It focuses on advancing techniques for processing and utilizing food and agricultural waste by applying microbiology, chemistry, and process engineering.

6) **Food and Postharvest Engineering Laboratory**
This field focuses on the scientific exploration of applying engineering principles and concepts to various aspects of handling, processing, and distributing agricultural products. It specifically focuses on the conservation and conversion of agricultural products. It comprises the science behind designing post-harvest and food processing equipment and developing, operating, and managing processes related to agricultural products.

7) **Environmental Engineering and Agricultural Building Laboratory**
The advancement of science and technology in technical analysis of building environmental conditions, specifically in agricultural settings, and the development of methods and technologies to control and optimize the environmental conditions within agricultural buildings, ensuring the environment meets the requirements of the cultivated agricultural products. The material coverage of this library includes building materials, environmental control equipment, and agricultural products. The main practicum and research equipment include compressive test equipment, Vicat tool, Saturated Surface Dray (SSD) moisture content test equipment, oven, silo model, pressure transducer, proving ring, analogue digital converter, evaporative cooler, oxygen meter, pH meter, NOx and SOx meter, thermohygrometer, growth chamber, air sampler, and hot wire anemometer.

8) **Agriculture Machinery Energy Laboratory**
This laboratory's formal scope comprises several key areas: machine element design, agricultural machinery design, ergonomics, energy conversion, mechanical technology, agricultural tools and machinery, and mechatronics. Furthermore, its material coverage is focused on energy and machinery related to the production and processing of biomass. The laboratory has various facilities to support its research and practical work. These facilities include a machine testing unit, manufacturing unit, design unit, energy conversion unit, and units dedicated to electrical, electronics, and mechatronics.

9) **Land and Water Resources Engineering Laboratory**
This laboratory focuses on advancing science and technology in soil and water engineering, particularly in the context of agricultural engineering. The material coverage of this facility includes soil, water, and agricultural engineering. To

support its research and practical work, the laboratory is equipped with a range of key equipment and tools, including hygrothermograph recorders, ombrometer recorders, cup anemometers, A-pan evaporimeters, digital planimeters, theodolites, BTMs (Basic Transmittance Measurement instruments), measuring rods, compasses, Abney levels, GIS (Geographic Information Systems), AWRL (Airborne Wireless Radio Link) equipment, current meters, water passes, analytical balances, ovens, parameters, Casagrande devices, tensiometers, soil samplers, water pumps, flow meters, and neutron probes.

10) **Biological Physics Laboratory**

This laboratory operates within the formal scope of interdisciplinary science, utilizing techniques from the physical sciences and knowledge of biological structures, functions, and systems. It specifically explores biomass within the fields of both physics and biology. Furthermore, this laboratory has essential equipment and instruments to facilitate its research and investigations. These include morphometry tools and devices for measuring energy and stress in plants and animals, particularly in response to various physical stimuli such as heat, force, sound, light, and electric charge. Additionally, the facility studies the relationship between the physiological activities of plants and animals and the nature of water, gas, and nutrient transfer phenomena.

11) **Quality Analysis and Standardization Laboratory**

This laboratory is dedicated to advancing the understanding and mastery of quality concepts and associated testing methods. It also focuses on comprehending and utilizing quality control tools and methodologies, including the seven tools and eight steps, at various stages within industrial systems. The laboratory emphasizes knowledge of quality management systems applied nationally and internationally. This facility's material coverage extends to agricultural and food products.

12) **Management and System Industry Laboratory**

Dedicated to the development and application of various managerial techniques. These techniques comprise scientific management, business organization, and quantitative management. The material focus of this laboratory lies within the agricultural industry, which includes processing products derived from animals, vegetables, and microbes.

13) Production System Laboratory

This facility is concerned with developing techniques and technologies to integrate production resources, agricultural materials, capital, and energy more effectively and efficiently to produce value-added production outputs.

14) Bioindustry Laboratory

This laboratory supports laboratory-scale production equipment and systems readily upgradable to pilot scale. This includes PCR equipment, fermenters, evaporators, spray dryers, freeze dryers, and a wide range of analytical instruments.

15) Systems Analysis and Simulation Laboratory

This laboratory specializes in applying analytical and design principles, modelling, and system simulation techniques to industrial applications in agriculture. It utilizes computer technology, comprising both hardware and software, to achieve optimization objectives. The material coverage of this laboratory includes the analysis and simulation of systems within the agricultural industry, capitalization of system resources and numerical computing, and informatics related to agricultural industry systems. To support its research and practical work, the facility is equipped with computer hardware in networked computers (LAN) and software, including operating systems, computer language programs, and applications essential for conducting computational analysis and simulation of industrial systems.

16) Industrial Design and Waste Control Laboratory

This laboratory focuses on advancing engineering science in various areas, including layout and material handling, process design, agro-industrial process control systems (including the development and packaging of new products), agro-industrial machine tools, work design, by-product management, and the agro-industrial environment. Furthermore, its material coverage comprises construction, maintenance, evaluation, and assessment competencies. To support its research and practical work, the laboratory is equipped with various tools and equipment, including vacuum pumps, BOD incubators, UPL mockups, flouring machines, triple beam balance scales, blenders, mlinjo emping pounders, rice cookers, meat breaking machines, coconut shredding machines, stainless steel vessels, vessels for fluid studies, and other complementary tools.

3.4.4. Library

FAT's library is situated on the fourth floor of the new building. It houses a wide range of resources, including books, scientific journals, research reports, and various reference materials essential for lectures, practical sessions, and other learning activities within the faculty. The latest library data are presented in Table 3- 10.

Table 3-10. Faculty of Agricultural Technology Library Collection

No.	Collection Types	Total (Title)
1	Textbooks and Reference Books	9.152
2	Undergraduate Thesis	6.408
3	Master Thesis	1.052
4	Dissertation	230
5	Research Report	585

The library uses an open-access system to cater to the requirements of students and other users. This approach allows library users to independently select and access their desired materials. To enhance the accessibility of information and collections, the library offers an online catalogue/OPAC as a search tool. Through this online catalogue, users can search using multiple criteria, including author, title, and subject, thereby streamlining the information retrieval process. The OPAC can be accessed through the address opac.lib.ugm.ac.id.

FAT users can access subscribed databases such as Science Direct, ACS Publication, Proquest, Scopus, Wiley Online-Ebooks, and others through library computers. The library also provides hotspots for internet connectivity for those who prefer to use their laptops.

Students, lecturers, and employees in FAT are automatically granted library membership. However, obtaining a library member card (LMC) is necessary to fully utilise the available services. These cards can be obtained by registering at the circulation section of the library, which is a process that includes completing a registration form and submitting two passport-sized photos measuring 2 x 3 cm. Library services are accessible during regular working days from Monday to Thursday at 07.00-15.30 WIB and Friday at 07.00-14.30 WIB without a break.

CHAPTER IV. EDUCATION SYSTEM

4.1. Semester Credit System

The implementation of education at FAT UGM utilizes the Semester Credit System (SKS), a system that regulates the planning, preparation, and execution of educational programs using credit units for lectures and practical sessions as a measure of educational workload. Each lecture and practical session is assigned a weight proportional to its necessity in achieving educational objectives. In this credit system, the study load that must be completed by students in a particular study program is stated in terms of semester credit units (SKS).

Within the SKS system, the educational load required of students and the workload expected of lecturers are expressed in credit units. This is based on the number of hours required for teaching and practical activities, such as lectures, laboratory work, projects, seminars, research, and other academic activities. The credit value for each activity is determined by the amount of time (in hours) needed to carry out these activities. The details are as follows:

1) Credit Units for Lectures

One SKS is equivalent to three hours of educational activities per week over the course of a semester. Since one semester consists of 16 weeks, one SKS corresponds to 48 hours of educational activities in a semester.

a. For students, three hours of educational activities per week (1 SKS) consist of one hour of face-to-face lecture sessions conducted by the lecturer, one hour of structured activities planned by the lecturer but not face-to-face (such as homework, writing assignments, etc.), and one hour of independent learning activities by the student. This includes activities such as exams (midterms, finals, quizzes, etc.).
b. For lecturers, one SKS (3 hours of activities per week) includes one hour of face-to-face lecture sessions, one hour of planning and evaluating the lecture sessions, and one hour for subject development.

2) Credit Units for Laboratory Practice (Practical Work)

The calculation of workload for practical activities considers the psychomotor skills required for laboratory activities. The basic principles are similar to those for lectures, but the workload of one hour of lecture is equivalent to two to three hours of practical work. Therefore, one SKS of practical activities equals 2 to 3 hours of psychomotor activity, accompanied by one hour of task preparation, such as writing reports or planning. Hence, the total workload for practical activities is 4 to 5 hours per week or 64 to 80 hours per semester. If laboratory reports are included, the workload will be adjusted accordingly and translated into the corresponding number of SKS.

3) Credit Units for Research

The calculation of SKS for research activities, such as thesis or dissertation writing, is based on the workload equivalent to physical and practical activities. One SKS of research equals 64 to 80 hours per semester.

4.2. Academic Calendar

The implementation of learning activities at FAT UGM for the 2024/2025 academic year is organized based on the academic calendar as shown in Table 4-1.

Table 4-1. Academic Calendar of the Faculty of Agricultural Technology, UGM, Academic Year 2024/2025

Semester I

TIME	ACTIVITIES
July 1, 2024 – July 31, 2024	Re-registration for Odd Semester 2024/2025 for continuing students
July 24, 2024 – July 25, 2024	Graduation Ceremony for Postgraduate Students, Period IV, Academic Year 2023/2024
July 31, 2024	Deadline for Tuition Fee Payment for Fall Semester 2024/2025
August 1, 2024 – August 10, 2024	course Registration Period for Odd Semester 2024/2025 for continuing students
August 10, 2024 – August 11, 2024	course Registration Period for Odd Semester 2024/2025 for new students
August 12, 2024	Beginning of Academic Activities for Odd Semester 2024/2025
September 25, 2024	Inaugural Lecture for New Postgraduate Students
October 1, 2024 – October 25, 2024	Reporting Period for PD-DIKTI 2023-2
September 30, 2024 – October 11, 2024	Midterm Examination Period (UTS) for Odd Semester 2024/2025
October 23, 2024 – October 24, 2024	Graduation Ceremony for Postgraduate Students, Period I, Academic Year 2024/2025
November 29, 2024	Last Day of Classes for Odd Semester 2024/2025
December 2, 2024 – December 13, 2024	Final Examination Period (UAS) for Odd Semester 2024/2025
December 19, 2024	UGM 75th Anniversary Celebration

Semester II

TIME	ACTIVITIES
January 2, 2025 – January 31, 2025	Re-registration for Even Semester 2024/2025
January 29, 2025 – January 30, 2025	Graduation Ceremony for Postgraduate Students, Period II, Academic Year 2024/2025
January 31, 2025	Deadline for Tuition Fee Payment for Even Semester 2024/2025
February 3, 2025 – February 7, 2025	course Registration Period for Even Semester 2024/2025
February 10, 2025	Beginning of Academic Activities for Even Semester 2024/2025
April 7, 2025 – April 18, 2025	Midterm Examination Period (UTS) for Even Semester 2024/2025
April 25, 2025 – April 30, 2025	Reporting Period for PD-DIKTI, Period 2024-1
April 23, 2025 – April 24, 2025	Graduation Ceremony for Postgraduate Students, Period III, Academic Year 2024/2025
May 30, 2025	Last day of classes for Even Semester 2024/2025
June 2, 2025 – June 13, 2025	Final Examination Period (UAS) for Even Semester 2024/2025
June 16, 2025 – July 31, 2025	Semester break / Announcement of exam results
July 23, 2025 – July 24, 2025	Graduation Ceremony for Postgraduate Students, Period IV, Academic Year 2024/2025

Source: Academic Calendar of UGM Academic Year 2024/2025. Implementation may be adjusted based on on-site conditions.

4.3. Completion of the Study Plan Card (KRS)

At the beginning of each semester, all students are required to register for the planned academic activities by filling out the Study Plan Card (KRS). Completing the KRS is an important process that enables students to select their courses and plan their academic strategies effectively. In addition to registering for courses and practical sessions, the KRS also outlines the student's responsibilities and learning objectives. courses and practical sessions in the KRS may be considered mandatory or elective. The selected courses and practical activities will appear on the Study Results Card (KHS) and academic transcripts at the end of the semester. To ensure a smooth KRS process, the following documents are provided by the faculty:

a. The academic calendar,
b. The course schedule, which indicates the time and location of the course, status (mandatory/elective), and credit load (SKS),
c. The academic supervisor (for master's students) or the program advisor/promoter (for doctoral students).

Elective courses may be taken from other study programs within UGM. For courses taken outside the faculty, the process for registering these courses must be coordinated through the faculty by submitting a formal request letter.

4.4. Lecture and Practical Session Processes

The Academic and Student Affairs Division prepares the draft schedule for lectures and practical sessions and shares it with the Study Program for feedback from students and lecturers. After revisions are finalized, the schedule is officially released. Lectures and practical sessions are conducted between 07:15 and 17:30. The Academic and Student Affairs Division coordinates the management of these academic activities, while the practical session is the responsibility of the Study Program.

a. Academic Regulations

1) For Students
   a) Students are required to attend lectures regularly as per the schedule assigned at the beginning of the semester.
   b) Students are not permitted to attend two or more courses or practical sessions at overlapping times.
   c) Students must fill out the attendance sheet. The minimum attendance requirement for lectures is 75%. Absences due to specific reasons are only allowed up to a maximum of 25% of the total lecture sessions. Students with attendance below 75% are not allowed to take the final exam.
   d) Students must be in the designated classroom before the lecture begins. Students arriving more than 15 minutes after the lecture has started will not be permitted to enter the classroom except with logical reasons and prior approval from the lecturer.
   e) During lectures, students must dress neatly and tidily. Clothing such as t-shirts, sandals, and attire deemed inappropriate in any form is prohibited. Students must dress modestly and decently. Quietness must be maintained during the lecture.

2) For Lecturers
   a) Lecturers conducting the lecture must arrive on time.
   b) Lecturers are encouraged to conduct the class using a Student-Centered Learning approach, where students actively engage in the learning process.
   c) Lecturers must ensure smooth lecture delivery.
   d) Opportunities must be provided for students to ask questions.
   e) Supervise student attendance during lectures.
   f) Record student attendance.

b. Practicum Rules

Considering the special nature of laboratory-based courses, the practicum rules are specifically regulated by each laboratory under the coordination of the Head of Laboratory or Departmental Practical Coordinator. Nevertheless, the following general provisions apply to all practicums:

1) Students must participate in practicum regularly according to the schedule determined and previously announced.
2) Students must record their attendance. Absences due to specific reasons are only allowed for up to a maximum of one time of the practicum sessions. Students whose absences exceed this limit are not allowed to participate in the exam.
3) Students must arrive at the laboratory at least 15 minutes before the practicum begins to prepare for the required activities.
4) Students arriving more than 30 minutes late will not be allowed to enter the laboratory except with prior permission from the practicum supervisor.
5) During the practicum, students must dress neatly and tidily. Clothing such as t-shirts, sandals, and other inappropriate attire is prohibited. Students are required to wear proper attire and laboratory coats. Decency and tidiness are mandatory, and students must adhere to the safety standards applicable in the laboratory and its surroundings (e.g., during internships, etc.).

4.5. Examination System

a. Written Examination

Examinations can be conducted in various formats, such as written exams, oral exams, seminar-style exams, essay-writing exams, and others. Exams can also be implemented using various combinations of these methods. The method used is adapted to the specific characteristics of the field of education. Examinations are conducted with the following objectives:

1) To assess whether students possess the necessary competence in the material delivered during lectures/practicals.
2) To evaluate whether the material tested aligns with the content provided during lectures/practicals and whether the material delivery is sufficiently effective, thereby encouraging students to make reasonable efforts to understand the material.

To achieve the purpose and objectives of the examination, at least two exams must be conducted in a semester: one mid-semester exam (midterm) and one end-of-semester exam (final). Both of these exams are mandatory, so lecturers (teaching staff) in charge of the course must administer them. The schedule for written exams is determined by a committee under the supervision of the Coordinator for Academic and Student Affairs and overseen by the Vice Dean I (Academic and Student Affairs).

Examination Rules:

1) Participants must dress neatly and appropriately. The use of sandals and sleeveless shirts is prohibited.
2) Participants must arrive at the designated location 15 minutes before the exam begins and bring the required examination materials.
3) Participants must sit according to the assigned seat number and display their student ID card and exam card on the desk.
4) Participants are not allowed to bring books, notes, bags, or cases into the exam room unless the exam is explicitly designated as an "open book" exam.
5) Participants are prohibited from copying or working on the exam using unauthorized means or collaborating with others.
6) During the exam, participants must maintain politeness, order, and cleanliness and are not permitted to leave the room without the proctor's permission.
7) Cheating in any form, including attempting to bring in unauthorized materials, will result in immediate disciplinary action, with an official report issued.
8) Participants arriving more than 15 minutes late will not be allowed to enter the exam room without the committee’s approval.
9) Participants must immediately leave the exam room after completing their answers unless otherwise instructed by the proctor.
10) Participants who violate any of the above rules may be subject to sanctions, removal from the exam room, or other penalties as determined by the committee.
11) If a participant is unable to attend the exam due to unforeseen circumstances, a letter of explanation must be submitted to the academic office no later than one day after the exam is conducted.
12) Make-up exams may be scheduled within one week after the original exam date.
13) Make-up exams are only intended for participants who were absent from the original exam due to valid reasons, as evidenced by an official letter of explanation. The letter must be submitted within the prescribed time frame and verified by the relevant authorities, including academic supervisors or institutional representatives.
14) Other matters not covered in these rules will be determined and communicated later.

Only students who meet the stipulated requirements are allowed to take the exams. Results will be announced publicly (posted on notice boards or other accessible platforms). Students who participate in academic activities not listed in their course enrollment form (KRS) are considered ineligible, and their exams will be declared invalid.

The examination system employs an absolute grading approach aimed at evaluating students' understanding of the material based on predetermined standards. Students are graded using letter grades: A, A-, B+, B, B-, C+, C, C-, D+, D, and E. In exam grading,

there don't have to be grades from A-E. Announced grades are immutable and cannot be changed.

b. Oral Exams

Oral exams are conducted for specific academic activities, such as seminars, special topics, theses, dissertations, or specialized courses determined by lecturers. The technical implementation of oral exams is agreed upon between the supervising lecturer and the student.

c. Special Assignments

Exams in the form of special assignments, such as research papers, journal reviews, topic analyses, or other similar formats, may be conducted as part of the examination. The format of such assignments will depend on agreements between the lecturer and the student.

In some cases, these assignments may be conducted alongside exams or integrated into the course system.

4.6. Study Evaluation

Academic evaluations are designed to assess students' academic achievements throughout their learning process. These evaluations focus on the cumulative grade point average (GPA) as an indicator of students' performance during their academic journey. Grades are converted into numerical values to calculate GPA based on their respective weightings. The numerical weighting system for letter grades is organized as follows:

Grade	Weight	Grade	Weight	Grade	Weight
A	4.00	B-	2.75	C/D	1.50
A-	3.75	B/C	2.50	D+	1.25
A/B	3.50	C+	2.25	D	1.00
B+	3.25	C	2.00	E	0.00
B	3.00	C-	1.75		

The GPA (Grade Point Average) is calculated using the following formula based on the grade weights:

$$\text{GPA} = \frac{\sum(\text{Credits} \times \text{Grade Weight})}{\sum \text{Credits}}$$

The Initial Academic Evaluation for students in the Master's program is conducted at the end of the second semester (semester 2). If, by the end of the second semester, students have not completed at least 15 credits and/or have a GPA below 3.00 for their best 15 credits, they will not be permitted to proceed to the thesis stage and must adhere to the deadlines set by the Program/Department/Faculty. Within the maximum extension period of one additional semester, students who fail to achieve the required academic progress—completing 15 credits with a GPA of at least 3.00—will not be allowed to continue their studies and will be declared to have withdrawn from the program (dropout).

The Initial Academic Evaluation for students in the Doctoral program is conducted at the end of the third semester (semester 3). If students have not passed the Comprehensive Examination (Dissertation Proposal) by the end of the third semester, they will be granted a maximum extension of one additional semester to fulfil this requirement. If students fail to demonstrate progress and do not pass the Comprehensive Examination (Dissertation Proposal) within this extended period, they will not be allowed to continue their studies and will be declared to have withdrawn from the program (dropout).

CHAPTER V. MASTER PROGRAM

The Master's Program (S2) at FAT is generally organized with the following objectives to produce graduates who:

a. Possess the ability to develop and update scientific knowledge, technology, and/or the arts through mastering and understanding approaches, methods, and scientific principles in their implementation.
b. Have the ability to solve problems in their field of expertise through research and development activities based on logical and systematic thinking.
c. Demonstrate the capability to develop professional practices as evidenced by sharpness in analyzing issues, consistency, and thoroughness in addressing a problem or related professional tasks.

The implementation of the master's program is administratively coordinated by the faculty, while the substantial academic aspects are managed by departments through their respective study programs. The Master's degree study program is led by a Head of the Study Program.

In the academic year 2023/2024, FAT at UGM offers master's degree academic education in the following fields:

1) Department of Food and Agricultural Products Technology
   a) Master in Food Science and Technology
   b) Master in Estate Crop Products Technology
2) Department of Agricultural and Biosystem Engineering
   a) Master in Agricultural Engineering
3) Department of Industrial Agricultural Technology
   a) Master in Agroindustrial Technology

Several general regulations for the master's programs at the FAT UGM, are as follows:

5.1. Admission of Students

a. Requirements

The general requirements to become a student of the master's programs at the Faculty of Agricultural Technology are as follows:

1) A recent formal photograph, dressed in formal attire (facing the camera) with a blue background.
2) An undergraduate diploma (S1) that has been officially legalized.
   a) A Certificate of Graduation is not acceptable.
   b) Graduates from foreign universities must provide a statement of recognition from DIKTI.
3) Official Transcript or Copy of an Officially Legalized Transcript, a GPA requirement for undergraduate degrees (S1) as follows:

a) A minimum GPA of 2.50 on a scale of 4.0 for applicants from accredited A study programs or
b) A minimum GPA of 2.75 on a scale of 4.0 for applicants from accredited B study programs or
c) A minimum GPA of 3.00 on a scale of 4.0 for applicants from accredited C study programs.

4) Accreditation Certificate of the Last Completed Study Program. The accreditation certificate must reflect the most recent accreditation status and must be supported by a scanned or printed screen version from the official BAN-PT website, valid at the time of submission. Study programs currently undergoing re-accreditation must attach a letter from the relevant institution confirming receipt of the accreditation proposal. For international graduates, the accreditation must be supported by a Letter of Recognition of Foreign Diploma from DIKTI. Applications will not be processed further if the accreditation is invalid or not attached.
5) Certificate of Academic Potential Test Results. Test results for the Graduate Academic Potential Test (PAPs) by UGM, the Academic Potential Test (TPA) by PLTI, or TPA by BAPPENAS are required, with a valid certificate issued no more than two years prior to the application deadline.
6) English Proficiency Test Results. An English proficiency test certificate is required, with validity no more than two years before the issuance of the certificate. Recognized tests include:
   a) Academic English Proficiency Test (AcEPT) by UGM; or
   b) Test of English Proficiency (TOEP) by PLTI recognized by DIKTI for lecturer certification or
   c) International English Testing System (IELTS) from institutions recognized by IDP; or
   d) Internet-Based Test (IBT) TOEFL from institutions recognized by IIEF; or
   e) Institutional Testing Program (ITP) TOEFL from institutions recognized by IIEF.
7) Letter of recommendation from two lecturers concerned about the previous level of study, preferably the academic advisor.
8) Health Certificate issued by a public health centre or a hospital.
9) Special Requirements
   a) A statement of intent outlining the applicant's motivation for pursuing postgraduate studies, including reasons, expectations, proposed research topics, and plans after graduation.
   b) A thesis research proposal, essay, or other special requirements specified by the study program do not need to be uploaded but must be sent directly to the intended study program along with a photocopy of the application receipt.

c) A study permit or leave approval from the employing institution for applicants who are currently employed.
d) A study permit or leave approval from the employing institution for applicants under the BUDI DN scholarship program.

b. Registration Procedures

1) Contact your destination study program to find out the special requirements and additional requirements needed for selection.
2) Create a registration account on the um.ugm.ac.id.
3) Apply online:
   a) Prepare all required documents; subsequent files will not be processed after submitting the registration.
   b) Prepare scanned documents below (each file should be a minimum size of 150 KB and a maximum of 800 KB; the documents should be coloured and legible for verification purposes) and upload them when registering online.

No	Document	Format
1	A recent formal photograph, dressed in formal attire (facing the camera) with a blue background	.jpg
2	An undergraduate diploma (S1) that has been officially legalized	.pdf
3	Official Transcript or Copy of an Officially Legalized Transcript	.pdf
4	Accreditation Certificate of the Last Completed Study Program	.pdf
5	Certificate of Academic Potential Test Results. Test results for the Graduate Academic Potential Test (PAPs) by UGM, the Academic Potential Test (TPA) by PLTI, or TPA by BAPPENAS with a valid certificate issued no more than two years prior to the application deadline	.pdf
6	English Proficiency Test Results a. Academic English Proficiency Test (AcEPT) by UGM; or b. Test of English Proficiency (TOEP) by PLTI recognized by DIKTI for lecturer certification or c. International English Testing System (IELTS) from institutions recognized by IDP; or d. Internet-Based Test (IBT) TOEFL from institutions recognized by IIEF; or e. Institutional Testing Program (ITP) TOEFL from institutions recognized by IIEF.	.pdf
7	Letter of recommendation from two lecturers concerned about the previous level of study, preferably the academic advisor.	.pdf
8	Health Certificate issued by a public health centre (Puskesmas) or a hospital.	.pdf
9	Special Requirements: a. A statement of intent outlining the applicant's motivation for pursuing	.pdf

	postgraduate studies, including reasons, expectations, proposed research topics, and plans after graduation. b. A thesis research proposal, essay, or other special requirements specified by the study program do not need to be uploaded but must be sent directly to the intended study program along with a photocopy of the application receipt.	
10	a. A study permit or leave approval from the employing institution for applicants who are currently employed. b. A study permit or leave approval from the employing institution for applicants under the BUDI DN scholarship program.	.pdf

4) Payment of the registration fee through the multi-payment system of Bank Mandiri, BNI, BRI, Bank Syariah Mandiri (BSM), or BTN. Registration fees that have been made cannot be withdrawn or transferred for the next period for any reason.
5) The registration proof is printed and used for registration purposes when a prospective undergraduate program student is declared accepted.

More information on registration requirements, procedures, and time can be downloaded at http://um.ugm.ac.id.

c. Admission Selection

Academic selection is carried out by a team consisting of the Head of the Study Program, the Academic Development Team, and other lecturers presided over by the Head of the Study Program with admission criteria:

a) Academic skills
b) Completeness of specified requirements
c) Intention correlating with educational background
d) Available space
e) Accreditation status of the undergraduate study program from which the prospective students originate.

In addition to the above criteria, when deemed necessary, the Study Program can conduct a written test or other forms as a basis for accepting prospective students.

d. Registration and Re-registration

For prospective new students who are declared accepted, they are required to register. Similarly, old students are required to re-register (re-registration) at the beginning of each semester, not more than a week before classes commence. Those who do not re-register and do not have a valid student card are not allowed to carry out academic activities. Students who do not re-register for two consecutive semesters without any academic leave are declared to have dropped out of study

.

5.2. Academic Management

a. Workload

The credit load for the Master's degree program is set at 40-50 credits above the Bachelor's degree level for regular programs and 36-40 credits for research-based programs (By-Research). This total credit load includes compulsory courses, elective courses, practicals, seminars, research, and thesis preparation. The determination of mandatory and elective courses, as well as the total credit load for all academic activities, is decided by each study program according to the applicable regulations.

In the Master's Program of the FAT UGM, it is possible for students to transfer credits or take courses offered by other Study Programs/Faculties/Universities, either domestically or internationally, provided that these courses are deemed relevant to the student's study program and are approved by the Head of the Study Program. courses taken from outside the faculty may be recognized as part of the program's academic curriculum, up to a maximum of 12 credits.

The Master's Program at the FAT UGM, also allows a system of deficiency courses. Deficiency courses refer to courses that must be taken by students to fulfil certain knowledge prerequisites, enabling them to effectively follow the learning process in the study program. The total number and type of deficiency courses required by a student will be determined by the Head of the Study Program. Credits from deficiency courses are not calculated as part of the total credits required to complete the degree program.

b. Academic Advising

Academic activities, including lectures, for the odd semester start from August to January (of the following year), and for the even semester start from February to July (of the same year). In the first semester, students will be supervised by the Head of the Study Program. Starting in the second semester, students will be guided by an Academic Advisor. The Academic Advisor is appointed by the Head of the Study Program based on the compatibility of the advisor's field of research with the student's interest and is stipulated in a Decree issued by the Dean.

Thus, the Academic Advisor also serves as the Main Supervisor for the student's research and thesis. The duties of the Academic Advisor include assisting students in

determining their coursess and study load for each semester and guiding them in their research and thesis preparation. The Main Thesis Supervisor is responsible for supervising the research/thesis preparation, often alongside the Academic Advisor.

c. course Registration and Study Plan Card (KRS)

Lecture activities and academic activities can only be attended by students who have filled out their Study Plan Card (KRS), which has been approved by the head of the study program or the academic advisor. Students must prepare their KRS at the beginning of every semester. For first-semester students, course registration is determined by the Head of Study Program.

Rules for Preparing KRS:

a) Students are required to obtain the KRS form at the postgraduate teaching section of the faculty.
b) Students must consult with the head of the study program or the academic advisor regarding their courses and then complete and sign the KRS form.
c) course registration (KRS) is conducted one week before the start of the academic semester.
d) The KRS must be approved by the head of the study program or the academic advisor and indicated by proof of registration or re-registration.
e) The KRS is completed in three stages: one by the student, one by the teaching staff, and one stored by the Academic Advisor.
f) Changes to the KRS may only be submitted one week after lectures begin and must be approved by both the academic advisor and the head of the study program.
g) Cancellation of the KRS beyond the designated deadline will be permitted only under special considerations, which must also receive approval from the academic advisor and the head of the study program.

Students and lecturers are required to sign an attendance sheet at the beginning of each lecture. Students may only take exams if they have attended at least 75% of the total course sessions.

d. Study Result Card (KHS)

The Study Result Card (KHS) is a report card containing a collection of completed courses, practicals, and final assignments taken by a student, along with the grades earned. The issuance of the KHS is handled by the Academic Administration and is signed by the Head of the Study Program. The KHS serves as a fundamental document for the issuance of the student's final academic transcript.

e. Proposal, Research, and Thesis

All students must present their research proposals by the end of the second semester. The proposal must adhere to the writing format specified by the Faculty's prevailing academic standards. At the end of the semester, students are required to present the progress of their research before being allowed to proceed with their thesis.

The thesis represents a scholarly work or final research designed to fulfil the requirements for obtaining a Master's degree. The thesis is mandatory for all postgraduate students and must be prepared following the guidance of their advisors. It should be prepared by master's level students based on independent research in the field of science in accordance with their study program, guided by a minimum of two thesis supervisors. The thesis carries a credit weight of 8 to 12 credits.

f. Thesis Examination

The thesis examination is conducted after meeting the following requirements:

1) Completion of a minimum of 28–32 credits for regular programs and 6–7 credits for research-based programs (By-Research).
2) A minimum GPA of 3.00.
3) Demonstrated progress in research.
4) Drafted articles that are ready to be published, at least one in an accredited national journal (under review), one indexed international seminar proceedings for regular programs, one article in a reputable international journal, or two indexed international seminar proceedings for research-based programs.
5) Successfully passed the TOEFL with a minimum score of 400 and the TPA (Academic Potential Test) with a minimum score of 450.

Thesis examinations are conducted by an examining panel consisting of thesis supervisors (a maximum of two) and at least three (3) examiners. The panel is appointed by the Dean of the Faculty upon the recommendation of the Head of the Study Program. Students are expected to submit the thesis manuscript and publication manuscript to the Head of Study Program no more than one week before the examination is conducted. The publication manuscript contains part or all of the thesis in accordance with the writing guidelines from the university. The thesis examination lasts for 120 minutes, including 20 minutes of submission points by students. Students are expected to dress officially in long-sleeved shirts wearing ties, long dark pants for men, while for women, it can be adjusted.

The thesis evaluation is based on the following aspects: (1) The quality of the thesis, including content, methodology, systematic presentation, and language proficiency, and (2) the quality of the presentation during the exam, which includes mastery of material and methodology. The assessment of the thesis examination is expressed by the decision to pass

with or without improvement or not pass. Evaluation results are graded on a scale of 0 (zero) to 4 (four). Thesis examination results that are declared passed with or without improvement have an average score of ≥ 3.00. Thesis examination results that are declared not passed have an average score of < 3.00. Students who carry out thesis examinations and are declared not to have passed can retake the examination once.

The thesis manuscript is considered valid after being signed by the chairman and all examining team members and has been authorized by the Dean of Faculty. Students must provide one printed and bound copy along with a digital version (soft copy) on a CD to the Postgraduate Academic Section of the Faculty as a condition for graduation. The deadline for submitting the revised thesis is two (2) months after the thesis examination.

g. Study Progress Evaluation

The evaluation of study progress for Master's Program students is conducted in two (2) stages:

1) Mid-term evaluation:

   The evaluation of the mid-study stage for Master's Program students is conducted based on the following provisions:

   a) Students Students who, by the end of 2nd semester, do not attain 15 credits and have a minimum IP of 3.00 are not allowed to take a thesis until the deadline set by the Department/Faculty.
   b) If the student fails to complete their studies within the one (1) semester extension as stipulated above, the concerned student is no longer permitted to continue their studies and will be declared withdrawn or dropped out.

2) Final evaluation

   The evaluation of the final study stage for Master's Program students is conducted based on the following provisions:

   a) Students who, by the end of the third (3rd) semester, have not completed all learning activities with a minimum GPA of 3.00 (three point zero) will be issued a First Warning Letter.
   b) Students who, by the end of the fourth (4th) semester, have not completed all learning activities with a minimum GPA of 3.00 (three point zero) will be issued a Second Warning Letter.
   c) Students who, by the end of the fifth (5th) semester, have not completed all learning activities with a minimum GPA of 3.00 (three point zero) will be issued a Third Warning Letter and granted an extension of one (1) semester to complete their studies.
   d) If the student fails to complete their studies within the one (1) semester extension as stipulated above, the concerned student is no longer permitted to continue their studies and will be declared withdrawn or dropped out.

Students who have completed the required number of credits and met the curriculum requirements for the Master's Program are declared graduates if they

1) Fulfill the following conditions:
   a. Achieve a minimum cumulative GPA of 3.00 (three point zero) or 3.25 (three point two five) for the research pathway.
   b. Have no grades of D or E.
   c. Have passed their thesis examination.
   d. Have revised their thesis, as approved by the Dean/Department Head.
   e. Have published a scientific paper or manuscript deemed acceptable in a journal, with at least one (1) article originating from their thesis research.
2) Have been officially declared graduates in the faculty-organized graduation deliberation meeting.

Master's Program graduates from the Faculty of Agricultural Technology will be awarded graduation honours based on the following criteria:

1) **Cum Laude**: For students with a GPA ≥ 3.75 who complete their studies within a maximum of five (5) semesters.
2) **Very Satisfactory**: For students with a GPA between 3.51 and < 3.75 or a GPA ≥ 3.75 but who complete their studies beyond five (5) semesters.
3) **Satisfactory**: For students with a GPA between 3.00 and < 3.51.

h. Study Period Limits

All requirements for graduation and obtaining a Master's degree must be fulfilled within a minimum period of 2 (two) semesters and a maximum of 6 (six) semesters. If a student exceeds the maximum study period without completing the program, the student will no longer be permitted to continue and will be declared withdrawn or dropped out.

i. Academic Leave

A student is considered a full-time student upon completing registration. With the approval of the Academic Advisor and the Head of the Study Program, a student may request academic leave for a duration of one semester, with a maximum of two semesters. The request for academic leave must be submitted to the Faculty Dean before the commencement of the semester in question. Academic leave is not included in the calculation of the study period. However, any temporary suspension of studies outside of academic leave will be counted as part of the study period. Master's program students are eligible to apply for academic leave after completing at least one semester of study.

CHAPTER VI. MASTER IN FOOD SCIENCE AND TECHNOLOGY (MFST)

6.1. Introduction

Indonesia's rapid development has led to progress in the food industry, leveraging its vast natural resources. This positions the country to potentially establish an advanced and reliable food industry. With the increasing need for food and intense competition among domestic and foreign products, innovative research in this field must be carried out continuously by adopting the development of science and technology.

To face competition at the global level, high-quality human resources are needed, both in scientific development and expertise experience, including in food science and technology. Therefore, the role of study programs in preparing human resources who master food science and technology is very important.

The Food Science and Technology Study Program specializes in master's education and research activities on the nature, composition, and changes in food since it is harvested as agricultural products during handling, processing, and storage until it is served. The Food Science and Technology Study Program is organized through two tracks: Regular and By-Research.

6.2. Vision, Mission and Objectives

a) Vision

To become a quality study program that produces graduates relevant to the demands of human resources in food science and technology at the national and international levels.

b) Mission

To organize master's education in food science and technology to meet the needs of highly competent human resources who can compete at the national and international levels.

c) Objectives

1) have faith in God Almighty and are able to show a religious attitude.
2) able to develop knowledge in the field of food science and technology through research and publish the findings in scientific conferences or scientific journals.

d) Target

1) Improving the quality of student input.
2) Improving the academic atmosphere that leads to competence, professionalism, and upholding values.
3) Increase student mobility.
4) Improving the quality of thesis research and publications.
5) Improving the quality of academic services.

6.3. Graduate Profiles

a) Academics and Researchers
Graduates of MFST can become lecturers in Food Technology and Agricultural Products study programs or related departments or researchers in the field of food in research institutions or industries.

b) Professionals in the Food Industry
Graduates of MFST can work in production, quality assurance, research, and development in the food industry.

c) Bureaucrats in the Food Sector
Graduates of MFST can act as prospective bureaucrats in the food sector in government institutions, such as the Food and Drug Monitoring Agency, the National Standardization Agency, the Ministry of Agriculture, the Ministry of Industry, the World Health Organization (WHO), and the Food and Agriculture Organization (FAO).

6.4. Graduate Competencies

Regular Track

1) Attitude
   a) Pancasila minded and have awareness of the interest of the nation.
   b) Having responsibility, confidence, emotional maturity, ethics, and awareness of being a lifelong learner.
2) Knowledge
   Mastering theoretical concepts in specific areas of food science and technology and understand its recent advances.
3) Special Skills
   a) able to gather information from scientific findings, develop a conceptual framework and formulate research problems.
   b) able to 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.
   c) able to communicate the scientific findings in scientific conferences or scientific journals.

By Research Track

1) Attitude
   a) Demonstrate a Pancasila-based mindset, uphold academic integrity, and show awareness of contributing to national advancement through scientific research.
   b) Exhibit responsibility, confidence, emotional maturity, and professional ethics as an independent researcher, with a strong commitment to lifelong learning and continuous self-development.
2) Special Skills
   a) able to identify research gaps from existing scientific literature, construct a conceptual framework, and formulate relevant research questions or hypotheses that advance scientific knowledge.
   b) able to 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.
   c) 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.

6.5. Admission Requirements

This is in accordance with the information on the https://um.ugm.ac.id/. Specifically for the By-Research track, these requirements are added with:

1) At least two years of working experience in the research sector or,
2) Have a minimum publication in a SINTA 3 national scientific journal.
3) Have a pre-proposal document containing research interests.

6.6. Graduation Requirements

Regular Track

1) Have collected 40 – 50 credits with a minimum GPA of 3.00.
2) No D and/or E grades.
3) Have had a minimum publication of:
   a) One manuscript in an accredited national scientific journal with a minimum under review status or
   b) One manuscript in indexed international proceedings has a minimum status of accepted.

By-Research Track

1) Have collected 36 – 40 credits with a minimum GPA of 3.25.
2) No D and/or E grades.
3) Have had a minimum publication of:
   a) One manuscript in an indexed international scientific journal with accepted status or
   b) manuscripts in indexed international proceedings with accepted status.

6.7. Lecture

Regular Track

1) The curriculum is designed to enable students to complete their studies within 2 years.
2) Students with undergraduate degrees outside the Food Technology and Agricultural Products Study Program or a related field are required to complete matriculation courses. However, these course scores are excluded from credit and GPA calculations.
3) Elective courses can be taken from other study programs at Universitas Gadjah Mada for a maximum of 6 credits.
4) For the purposes of mobility, students can take courses from other universities for a maximum of 16 credits with the approval of the Head of Study Program before leaving for mobility.
5) Other provisions regarding the learning process refer to academic regulations at the Faculty and University levels.

By Research Track

1) The curriculum is designed to enable students to complete their studies within 2 years.
2) Part of the thesis research can be performed outside the study program with the approval of the Head of the Study Program.
3) Other provisions regarding the learning process refer to academic regulations at the Faculty and University levels.

Table 5.1. List of courses for regular track of Master in Food Science and Technology

No	Code	course	Credit	Semester
Compulsory courses for Regular Track				
1	TPTP215011	Research Methodology	3	Odd/Even
2	TPTP215012	Independent Study	3	Odd/Even
3	TPTP215013	Advanced Food Analysis	2	Odd/Even
4	TPTP215014	Scientific Communication I	1	Odd/Even
5	TPTP216011	Scientific Communication II	1	Odd/Even
6	TPTP216091	Thesis	12	Odd/Even
Elective courses				
1	TPTP215121	Protein Chemistry and Technology	2	Odd
2	TPTP215122	Carbohydrate Chemistry and Technology	2	Odd
3	TPTP215123	Lipid Chemistry and Technology of	2	Odd
4	TPTP215124	Waste Management	2	Odd
5	TPTP215125	Nutrition I: Macronutrients	2	Odd
6	TPTP215126	Experimental Nutrition	2	Odd
7	TPTP215127	Experimental Nutrition Laboratory Practice	2	Odd
8	TPTP215128	Probiotics and Prebiotics	2	Odd
9	TPTP215129	Post Harvest Physiology	2	Odd
10	TPTP215230	Food Flavor	2	Even
11	TPTP215231	Nutrition II: Micronutrients	2	Even
12	TPTP215232	Enzyme Chemistry and Technology	2	Even
13	TPTP215233	Food Microbiological Process	2	Even
14	TPTP215234	Thermal Process in Food Preservation	2	Even
15	TPTP215235	Fermentation and Bioseparation	2	Even
16	TPTP215236	Packaging and Shelf Life	2	Even
17	TPTP215237	Emulsion and Surfactant	2	Even
18	TPTP215238	Quality Management System	3	Even
19	TPTP215060	Functional Food and Nutraceutical in Metabolic Pathway*	2	Odd/Even

20	TPTP215061	Technology and Commercialization of Functional Food and Nutraceutical*	3	Odd/Even
21	TPTP215062	Advanced Nutritional Biochemistry*	3	Odd/Even
22	TPTP215063	Nutrigenomics, Proteomics, Metabolomics and Dietetics*	3	Odd/Even
23	TPTP215064	Selected Topics in Functional Food and Nutrition*	3	Odd/Even
24	TPTP215039	Special Topics	2	Odd/Even
25	TPTP215140	Current Topics in Food Science and Technology I	2	Odd
26	TPTP215241	Current Topics in Food Science and Technology II	2	Even
27	TPTP215042	Selected Topics I	1	Odd/Even
28	TPTP215043	Selected Topics II	1	Odd/Even
29	TPTP215044	Selected Topics III	1	Odd/Even
30	TPTP215045	Selected Topics IV	1	Odd/Even
31	TPTP215046	Selected Topics V	2	Odd/Even
32	TPTP215047	Selected Topics VI	2	Odd/Even
33	TPTP215048	Selected Topics VII	2	Odd/Even
34	TPTP215049	Selected Topics VIII	2	Odd/Even
35	TPTP215050	Selected Topics IX	3	Odd/Even
36	TPTP215051	Selected Topics X	3	Odd/Even
37	TPTP215052	Selected Topics XI	3	Odd/Even
38	TPTP215053	Selected Topics XII	3	Odd/Even
Matriculation courses				
1	TPTP215001	Unit Operation	2	Odd/Even
2	TPTP215002	Food Microbiology	2	Odd
3	TPTP215003	Food and Agricultural Product Analysis Laboratory Practice	2	Even
4	TPTP215004	Process Technology Practicum	3	Odd/Even
5	TPTP215005	Biochemistry	3	Even
6	TPTP215006	Nutrition	3	Odd
*Can only be taken by students participating in the Dual Degree program with Prince of Songkla University.				

Table 5.2. List of courses for by research track of Master in Food Science and Technology

No	Code	course	Credit	Semester
Compulsory courses for Research-based (by research) Track				
1	TPTP215011	Research Methodology	3	Odd/Even
2	TPTP215013	Advanced Food Analysis	2	Odd/Even
3	TPTP215014	Scientific Communication I	1	Odd/Even
4	TPTP216092	Thesis	30	Odd/Even

Teaching Staff

The teaching staff are from the Faculty of Technology and other faculties at UGM. All teaching staff hold national and international doctoral degrees.

Table 5-2. Lecturers of Master in Food Science and Technology

No	Lecturer	Employee Identity Number
1	Prof. Dr. Ir. Retno Indrati, M.Sc.	195901101985032001
2	Prof. Dr. Ir. Umar Santoso, M.Sc.	195902171985031002
3	Prof. Dr. Ir. Djagal Wiseso Marseno, M.Agr.	195911221986121001
4	Prof. Dr. Ir. Supriyadi, M.Sc.	196012131986031001
5	Dr. Ir. Muhammad Nur Cahyanto, M.Sc.	196107051986031004
6	Dr. Ir. Priyanto Triwitono, M.P.	196112011987101001
7	Prof. Dr. Ir. Tyas Utami, M.Sc.	196204181986032001
8	Prof. Dr. Ir. Eni Harmayani, M.Sc.	196306091987102001
9	Prof. Dr. Ir. Sri Raharjo, M.Sc.	196307231986031001
10	Prof. Dr. Ir. Chusnul Hidayat	196409191994031002
11	Dr. Rini Yanti, S.T.P., M.P.	197105201999032001
12	Prof. Dr. Ria Millati, S.T., M.T.	197205152006042001
13	Prof. Dr. Yudi Pranoto, S.T.P., M.P.	197308261999031002
14	Dr.nat.techn. FMC Sigit Setyabudi, S.T.P., M.P.	197610142008121003
15	Dian Anggraini Suroto, S.T.P., M.P., M.Eng., Ph.D.	197801012005012001
16	Dr. Zaki Utama, S.T.P., M.P.	197806092002121004
17	Andriati Ningrum, S.T.P., M.Agr., Ph.D.	111198306201308201
18	Dr.rer.nat. Lucia Dhiantika Witasari, S. Farm., Apt., M. Biotech.	198406222015042003
19	Dr. Widiastuti Setyaningsih, S.T.P., M.Sc.	198407212012122002
20	Rachma Wikandari, S.T.P., M. Biotech., Ph.D.	198601262018032001
21	Yunika Mayangsari, S.Si., M.Biotech., Ph.D.	198606022020122013

22	Dr. Dwi Larasatie Nur Fibri, S.T.P., M.Sc.	198702262015042002
23	Dr. Arima Diah Setiowati, S.T.P., M.Sc.	198703252020122011
24	Dr.nat.techn. Aulia Ardhi, S.T.P., M.Sc.	111198709201802101
25	Dr. Andika Sidar, S.T.P., M.Biotech.	111198712201607201
26	Dr. Manikharda, S.T.P., M.Agr.	198901172024062001
27	Dr. Fiametta Ayu Purwandari, S.T.P., M.Sc.	111198907201607202
28	Wahyu Dwi Saputra, S.T.P., M.Agr.Sc., Ph.D.	199106192024061001
29	Dr. Qurrotul A'yun, S.T.P., M.Sc.	111199108201811201
30	Bambang Dwi Wijatniko, S.T.P., M.Agr.Sc., M.Sc.	199204032019031015
31	Dr. Inasanti Pandan Wangi, S.T.	111199311202405201
32	Dr. Lulum Leliana, S.T.P.	111199507202402201

Prospective students

Prospective students of the Master in Food Science and Technology Study Program, UGM, are undergraduate students covering the following fields:

- Food and Agricultural Product Technology
- Chemical Engineering
- Agricultural Engineering
- Industrial Engineering
- Chemistry
- Agrotechnology
- Fishery
- Other related fields

CHAPTER VI. COURSE SYLLABUS OF MFST

6.1. Compulsory courses

1) **Scientific Communication I TPTP215014 1 Credit**
   Principles of scientific communication, publication ethics, the use of various media, and scientific communication techniques that include the preparation of scientific manuscripts and oral presentations.

2) **Scientific Communication II TPTP215015 1 Credit**
   Assistance in Manuscript Writing from Research Results, covering the title, abstract, introduction, research methods, results and discussion, conclusions and recommendations, and references. Evaluation of the Quality of National and International Scientific Journals.

3) **Research Methodology TPTP215011 3 Credits**
   This course describes principles and steps for logical and systematic thinking to explore information through surveys and problem-solving through the experimental research process. Stages in reasoning through problem identification, problem formulation, literature review, hypothesis formulation, preparation of sampling technique research methods, experimental design, data collection, statistical analysis, data presentation, and drawing conclusions. This course will also discuss types of research methods and experimental designs, as well as research ethics.

4) **Independent Study TPTP215012 3 Credits**
   This course assists students in preparing research proposals. It starts with a literature search in the field under study, which leads to the formulation of problems to be studied. The research objectives and research methods to be used will then be formulated to solve the research problem. Most of the learning process is through student presentations and discussions.

5) **Advanced Food Analysis TPTP215013 2 Credits**
   Fundamental theories, operating principles, and techniques for applying chemical analysis methods and instrumental techniques encompass separation processes, qualitative and quantitative analysis through chromatography, vibrational spectroscopy, X-ray diffraction (XRD), spectrophotometry, and the interpretation of measurement results

6) **Thesis (Regular) TPTP216091 12 Credits**
   This course is a way of developing knowledge in the field of food science and technology through research. It starts with the preparation of research proposals, then conducts research, interprets data, connects it to problem-solving, and publishes research results.

7) **Thesis (By-Research) TPTP216092 30 Credits**
This course is a way of developing knowledge in the field of food science and technology through research. It starts with the preparation of research proposals, then conducts research, interprets data, connects it to problem-solving, and publishes research results.

6.2. Elective courses

1) **Protein Chemistry and Technology TPTP215121 2 Credits**
This course discusses the problems and challenges in protein chemistry and technology, especially aspects of functional properties and modifications, as well as extraction and isolation techniques. Developments in science and technology in the field of protein chemistry and technology. Presentation of the latest research results in the field of protein chemistry and technology.

2) **Carbohydrate Chemistry and Technology TPTP215122 2 Credits**
Discusses the nomenclature, structure, and physical and chemical properties of mono-, di-, oligo-, and polysaccharides. It explores the physical, chemical, and functional properties of hydrocolloid carbohydrates (such as starch, cellulose, pectin, carrageenan, chitin/chitosan, glucomannan, and inulin), including isolation techniques, modifications, and their applications in the food industry.

3) **Lipid Chemistry and Technology TPTP215123 2 Credits**
Exploration of new sources of fats and oils, extraction and purification processes of fats and oils from these sources, and profiles of their physical and chemical properties. This includes investigating modification technologies commonly used for fats and oils and their characterization methods. Additionally, we will highlight recent advancements in research, processing technologies, and applications of lipids, such as oleogels and solid lipid nanoparticles. Finally, we will discuss the latest findings in lipid chemistry and technology.

4) **Post-harvest Physiology TPTP215124 2 Credits**
Problems and challenges in post-harvest physiology, specifically aspects of post-harvest technology, packaging, refrigeration, storage in modified atmosphere, controlled atmosphere and edible coating. Development of science and technology in the field of post-harvest physiology. Presentation of the latest research results in the field of post-harvest physiology.

5) **Nutrition I: Macronutrients TPTP215125 2 Credits**
Problems and challenges in macronutrients, especially aspects of the relationship between macronutrient metabolism and its implications for health; dietary fiber and resistant starch: physical, chemical properties and physiological roles in the body; and metabolic disorders

related to macronutrients. Developments in science and technology in the field of macronutrients. Presentation of the latest research results in the field of macronutrients.

6) **Experimental Nutrition TPTP215126 2 Credits**
Techniques for Testing Nutrient Quality: Chemical, Biochemical, Biological, and Microbiological Approaches. Nutritional Research Methods Using Animal Models and Cell Cultures, and Their Ethical Codes. Techniques and Methods in Nutritional Research and Molecular Analysis from Human Cell and Animal Model Experiments.

7) **Experimental Nutrition Laboratory Practice TPTP215127 2 Credits**
Animal model maintenance, preparation of animal feed, and effect of specific diets on blood parameters over a specific observation period. Sampling techniques and sample preparation.

8) **Probiotics and Prebiotics TPTP215128 2 Credits**
Concept of probiotics, probiotic strain requirements, screening, health effects and application of probiotics in food. Concept of prebiotics, types of prebiotics, effects on health, and application of prebiotics in food. Gut microbiota and influencing factors. Development of science and technology in probiotics and prebiotics.

9) **Waste Management TPTP215129 2 Credits**
The course describes the potential of waste in polluting the environment and discusses ways to prevent the pollution from happening. The course also discusses the development of science and technology in waste management.

10) **Food Flavor TPTP215230 2 Credits**
This course covers taste and aroma, trigeminal sensations, evaluation methods, flavor biogenesis and discusses developments in the field.

11) **Nutritional II: Micronutrients TPTP215231 2 Credits**
Issues and challenges in micronutrients, particularly the relationship between vitamins and minerals; health disorders due to vitamin and mineral deficiencies or excesses; as well as up-to-date information on the role of vitamins and minerals in the prevention and treatment of degenerative diseases. The development of science and technology in the field of micronutrients. Presentation of the latest research results in the field of micronutrients.

12) **Enzyme Chemistry and Technology TPTP215232 2 Credits**
Chemistry and functionality of enzymes, enzyme kinetics, modification of physical properties, enzyme production, enzyme applications in industry, and the development of

science and technology in the field of enzyme chemistry and technology. Presentation of recent research findings in the field of enzyme chemistry and technology.

13) **Food Microbiological Process TPTP215233 2 Credits**
Food microbial properties include the biodegradation of carbohydrates, proteins, and fat compounds and the biosynthesis of organic acids, amino acids, secondary metabolites, vitamins, antimicrobials, and toxins. Development of science and technology in the field of food microbiology. Presentation of current research results in the field of food microbiological processes.

14) **Thermal Process in Food Preservation TPTP215234 2 Credits**
Behaviour of spoilage bacteria in packaged food products. Measure and calculate the destruction of bacterial spores and food quality during the heating process, including D, Z, and activation energy values. Kinetics of bacterial spore degradation and product quality deterioration. Calculate heat propagation of various food products in different shapes and sizes of packaging. Determination of the coldest point of packaged food products (cans and pouches) that experience the slowest heating and calculation of the required thermal process heat adequacy. Calculation of sterilization time by graphical and mathematical methods. Development of science and technology in the thermal processes of food preservation. Presentation of the latest research results in the thermal process of food preservation.

15) **Fermentation and Bioseparation TPTP215235 2 Credits**
Issues and Challenges in Fermentation and Bioseparation, particularly concerning aspects such as fermentation medium, microbial management, inoculum development, bioreactor design, aeration, fermentation process control, and the principles of bioseparation and their applications in the fermentation industry. Advancements in Science and Technology in the Fields of Fermentation and Bioseparation. Presentation of Recent Research Findings in Fermentation and Bioseparation.

16) **Packaging and Shelf Life TPTP215236 2 Credits**
This course covers the different types of degradation that can occur in food products, the necessity of packaging, and various packaging methods for fresh, animal, and dry products. It also explores modified atmosphere packaging, active packaging, shelf life, and advancements in this field.

17) **Emulsions and Surfactants TPTP215237 2 Credits**
Characteristics and physical and chemical properties of emulsions in food products. Factors affecting emulsion stability. Ingredients for emulsions, preparation of emulsion formulas,

and emulsification techniques. Variety and characteristics of surfactants in food products. Ingredients for surfactants and manufacturing techniques of surfactants for food products. Concept of hydrophilic-lipophilic balance (HLB) and hydrophilic-lipophilic difference (HLD) and emulsion stability. Variety of emulsions and their applications in food and beverage products. Developments in emulsion and surfactant technology.

18) **Quality Management Systems TPTP215238 3 Credits**

Principles of quality management and key elements of quality management systems, including ISO 9001, ISO 17025, and ISO 22000 standards. Documentation systems, audit planning, and the interrelationship between ISO standards and other quality standards. The stages of implementing quality management systems and their development within the food/agricultural product industry.

19) **Advanced Biochemistry and Nutrition TPTP215062 3 Credits**

Nutrients and types of bioactive compounds, functional regulation, metabolism of nutrients, bioactive compounds at the cellular level, metabolism of nutrients and bioactive compounds affecting diseases such as NCDs, metabolism of nutrients and bioactive compounds with health and preventive effects, such as antioxidant, anti-inflammatory, anti-aging, anti-obesity, anti-cancer, anti-diabetes, and case studies.

20) **Functional Food Metabolism and Nutraceuticals TPTP215060 2 Credits**

Principles of metabolic pathways, life energy and cellular energy, systems and regulation of metabolic pathways, metabolism of functional foods, dietary supplements, nutraceuticals, phytochemicals, and dietary fibre, functional foods and nutraceuticals for gut health, antioxidants, oxidative stress, and aging, functional foods and nutraceuticals on glucose regulation, central nervous system (CNS) and effects of functional foods in the prevention of Alzheimer's disease and other neurodegenerative diseases, functional foods and nutraceuticals affecting the autonomic nervous system (ANS), cardiovascular system (CVS), and case studies.

21) **Technology and Commercialization of Functional and Nutraceuticals Food TPTP215061 3 Credits**

The food industry, food business, and market value of functional foods and nutraceuticals, consumers and marketing of functional foods and nutraceuticals, the processing technology of functional foods and nutraceuticals, extraction, separation, and purification technology of bioactive compounds/functional ingredients, dehydration and powder technology, encapsulation technology of nutraceuticals, dietary supplements, and functional ingredients capsule and tablet technology of nutraceuticals, dietary supplements, and functional ingredients, packaging technology of functional foods and dietary supplements, product

prototype development, shelf life studies, and sensory evaluation of functional foods, case studies on food industries/factories, nutraceuticals, and dietary supplement

22) **Nutrigenomics, Proteomics, Metabolomics and Dietetics TPTP215063 3 Credits**
Material and genetic expression, overview of nutrigenomics and nutrigenetics, mechanisms of epigenetic modification, genetic polymorphism and response to diet, functions and reactions of nutritional and bioactive compounds to genetic material, regulation of genetic expression by nutritional and bioactive substances, effects of nutritional and bioactive compounds on genetic expression mechanisms in diseases such as cancer, diabetes, hypertension, obesity, chronic kidney disease. Nutrition and individual diseases, current knowledge of technology, and omic analysis.

23) **Selected Topics on Functional Food and Nutrition TPTP215064 3 Credits**
Current interesting topics and technologies in nutrition and functional food include nutrigenomics and nutrigenetics, functional food ingredients, animal cell culture for biological activity testing, prebiotics, herbs, and spices. Bioactive peptides, membranes for bioactive compound production, antioxidant techniques, and bioactive compound analysis.

24) **Special Topics TPTP215039 2 Credits**
The assignments can be in the form of writing papers, small research or other assignments. course materials are of the student's preference and can be taken from other study programs or faculties. Can be given more than once in different semesters. Special assignments should be taken with the permission of the supervisor, who also plans the direction of the research and its use after graduation in accordance with the needs of the field of work.

25) **Current Topics in Food Science and Technology I and II TPTP215140 dan TPTP215241 2 Credits**
Discussing certain topics that are currently actual or advances in science that have not been accommodated in existing courses and are considered necessary to support the development of food science and technology

26) **Selected Topics I-XII TPTP215042- 215053 1-3 Credits**
Contains student academic activities to accommodate student mobility activities with credits in accordance with partner universities and can be carried out in the odd or even semester.

6.3. Matriculation courses

1) **Biochemistry TPTP215001 3 Credits**
   Biochemistry is a compulsory course discussing the chemical reactions that underlie life phenomena. This course provides basic knowledge about the structure and the role of water, acid-base reactions, and macromolecules, which consist of proteins, enzymes, carbohydrates, and lipids. Furthermore, it also elucidates the bioenergetics and the concept of macromolecule metabolism, including glycolysis, gluconeogenesis, Krebs cycle, electron transfer, photosynthesis, pentose phosphate pathway, protein degradation, synthesis, and degradation of lipids.

2) **Operations Unit TPTP215002 2 Credits**
   This course provides guidance for students in developing their research proposals, starting with a literature review in the relevant field that leads to the formulation of the research problem. To address this research problem, students will subsequently define the research objectives and select the methods to be used. The majority of the learning process consists of student presentations and discussions

3) **Food Microbiology TPTP215003 3 Credits**
   Explain and provide an understanding of beneficial microbes, the concept of microbial interaction with food, factors that influence growth, food damage by microbes, pathogenic microbes in food, physiology of pathogenic microbes, the role of food processing on microbial growth, various ways of controlling microbes.

4) **Nutrition TPTP215004 3 Credits**
   Studying the relationship between nutrition and health, which includes the function of food intake in meeting nutritional needs for growth, maintenance and maintaining optimal health. The material studied includes the digestive system, nutritional physiology, metabolism of nutrients (carbohydrates, lipids, proteins, vitamins, minerals and water) and their effects on health, as well as energy and disease disorders due to nutrients

5) **Food and Agricultural Products Analysis Laboratory Practice TPTP215005 2 Credits**
   Preparation of solutions and standardization for analysis, sample preparation, proximate analysis, and minor components, gravimetric and volumetric methods, and use of chromatographic and spectrophotometric methods for the quantitative determination of food components

6) **Process Technology Laboratory Practice TPTP215006 2 Credits**
Design and realization of a defined product concept, process design, and optimization. Application of business analysis and process verification at optimum conditions to produce product prototypes as required. Validation of product prototypes with packaging, marketing, and industry profiling.

INFORMATION

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