IPB University
Bogor Indonesia

Departement of
Agroindustrial Technology
Faculty of Agricultural Engineering & Technology

ACADEMIC PROGRAM BOOK

Agroindustrial Engineering

Undergraduate Program

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AGRO-INDUSTRIAL ENGINEERING

The Agro-industrial Study Program prepares graduates with the ability to design, develop, implement, control, evaluate, and improve the system performance of sustainable agroindustry, through an integrated approach of transformation process, system engineering, industrial management, and environmental aspects to increase the added value of agricultural/bio-based resources and their derivatives.

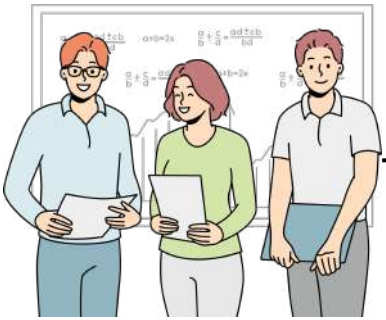
The objective of Agro-industrial Study Program is as follows: "After several (3-5) years of work, graduates of the Agroindustrial Engineering Program are able to apply the knowledge, skills, and attitudes learned from the academic program to solve engineering problems of agroindustry as quality engineers, be productive, and be sensitive to the consequences of work ethically and professionally, develop themselves through graduate education, become technopreneurs in the field of agroindustry, play an active role and communicate effectively in multidisciplinary teams, and continue to engage in lifelong learning".

LEARNING OUTCOME

1. Able to identify, analyze, and solve agro-industrial engineering problems, which include systems, processes, management and the environment, through the application of knowledge of mathematics, science, engineering and information technology using modern techniques and tools
2. Able to design agro-industrial systems/components, processes and products to meet desired needs within realistic constraints
3. Able to design and carry out scientific and engineering experiments and analyze and interpret the resulting data
4. Able to realize the importance and have the ability to engage in lifelong learning
5. Able to communicate effectively in writing and orally
6. Able to play an effective role in multidisciplinary and multicultural teams
7. Able to understand the application of ethics and professionalism in solving agro-industrial engineering problems in the context of economy, environment, society and other contemporary issues
8. Able to transform science and technology-based ideas into agroindustry business concepts (technopreneurs)

PROFILE

SNAPSHOTS



675
students
(undergraduate
and post graduate)

59%
of lecturers
are professors

34
Total lecturers

Total Supporting Staff : **21**

ACCREDITATION

Accredited by BAN-PT

Accredited by IABEE for Agro-Industrial and Similarly-named Engineering Programs

PROFILE

A Brief History

Founded in 1981 with the vision “To be an outstanding and internationally recognized education institution that provides qualified human resources in the field of agroindustrial technology and management”, this Study Program is internationally accredited by the Indonesian Accreditation Board for Engineering Education (IABEE).

The curriculum prepares graduates with the ability to design, develop, implement, control, evaluate, and improve the system performance of sustainable agroindustry, through an integrated approach of transformation process, system engineering, industrial management, and environmental aspects to increase the added value of agricultural/bio-based resources and their derivatives.

Upon completing the four-year Agroindustrial Engineering Program, graduates demonstrate proficiency in applying their knowledge, skills, and ethical work practices to solve engineering problems in the agroindustry. They are quality-oriented, productive, and conscious of the professional and ethical implications of their work. They also have the capacity for further education, entrepreneurial endeavors in the agroindustry, effective communication and collaboration in multidisciplinary teams, and a commitment to lifelong learning.

The department maintains strong relationships with industries and international universities to enhance the study program. Notable industrial partners include Corinthian, Kelola Mna Laut, Laris Manis Utama and many more. Additionally, it collaborates with esteemed universities such as Adelaide University, Maejo University, Universiti Putra Malaysia, Villanova University, Rhein Waal University, Insp Tolouse, and Tokyo University. Furthermore, it actively engages with the surrounding community through its collaborations with Lingkar Kampus.

CURRICULUM

Program Structure

Program Scheme	
Scheme 1 (3.5 + 0.5)	3.5 years at IPB University 0.5 year at partner University
Scheme 2 (3 + 1)	3 years at IPB University 1 year at partner University
Scheme 3 (4 + 0)	4 years at IPB and exposure to international activities in Indonesia or Abroad e.g. Summer Course, Agroindustrial Immersive Learning, International Conference or Seminar

CURRICULUM

Agroindustrial Engineering Program

Agroindustrial Engineering Program practices Engaged Scholarships to improve students' and study program's relevance to the current practice in agroindustry. Some activities are as follows:

Capstone Projects

Co-create innovative solutions with stakeholders by applying learned knowledge and skills to solve real-life complex engineering problems.

Student Exchange and Study Abroad

Gain exposure to different education systems and cultures and learning environment.

Summer School and Outreach Activities

Develop empathy, creativity and innovative capabilities through immersive learning and hands-on experience in a multicultural and multidisciplinary teams.

Research Internship

Engaged with research communities in different universities, industries (SMEs or MNCs), and rural areas to master their engineering problem solving skills.

Participation in International Conference/Seminars

Improve communication skills in writing and oral and develop relationships with academic communities.

CURRICULUM

Course Mapping

Semester 1

Courses	Credit	Semester
Religion	3(2-1)	1
Pancasila	1(1-0)	1
Civics	1(1-0)	1
Mathematics & logical Thinking	3(2-1)	1
Physics	3(2-1)	1
Chemistry	3(2-1)	1
Indonesia Language	2(1-1)	1
English	3(2-1)	1

Semester 2

Courses	Credit	Semester
Innovative Agriculture	2(2-0)	2
Computational Thinking	2(2-0)	2
Sports & Arts	1(0-1)	2
Calculus 1	3(2-1)	2
Fundamental of Biology	3(2-1)	2
Economics	2(2-0)	2
Sociology	2(2-0)	2
Statistics and Data Analysis	3(3-0)	2

Semester 3

Courses	Credit	Semester
Engineering Drawing	3(2-1)	3
Sustainable Agroindustry	2(2-0)	3
Human Resources Development	2(2-0)	3
Information and Computing Technology	2(1-1)	3
Industrial Mathematics	3(2-1)	3
Basic Calculation in Process Engineering	3(2-1)	3
Industrial Microbiology	2(2-0)	3
Agroindustrial Material Science	2(2-0)	3
Analysis of Agroindustrial Materials	1(0-1)	3

CURRICULUM

Course Mapping

Semester 4

Courses	Credit	Semester
Work Methods	2(2-0)	4
Algorithm and Computer Programming	3(2-1)	4
Unit Operations	3(2-1)	4
Unit Process	2(2-0)	4
Fundamental of Bioprocess Engineering	2(2-0)	4
Bioprocess Laboratory	2(0-2)	4
Packaging Technology	3(2-1)	4
Agroindustrial Product Materials	2(2-0)	4
Analysis of Agroindustrial Products	1(0-1)	4

Semester 5

Courses	Credit	Semester
Plant Layout and Material Handling	3(2-1)	5
Operations Research	3(2-1)	5
Cost Engineering	3(3-0)	5
Industrial Machines and Equipment	3(2-1)	5
Quality Engineering	2(2-0)	5
Environmental Management of Agroindustry	2(2-0)	5
Environmental Laboratory	1(0-1)	5
Industrial Statistics	3(2-1)	5

Semester 6

Courses	Credit	Semester
Production Planning and Control	3(2-1)	6
System Analysis and Decision Making	3(2-1)	6
Modelling and Optimization Process	3(2-1)	6
Agroindustrial Product and Business Innovation	3(2-1)	6
Warehousing and Storage Technology	3(2-1)	6
Industrial Pollution Control Technology	3(2-1)	6
Industrial Statistics	3(2-1)	6

CURRICULUM

Course Mapping

Semester 7

Courses	Credit	Semester
Research Methods and Scientific Presentation	2(1-1)	7
Investigation Project	3(0-3)	7
Agroindustrial Project Planning	3(2-1)	7
Work Health and Safety	2(2-0)	7

Semester 6 & 7

Courses	Credit	Semester
Thematic Outreach	4(0-4)	6 & 7
Industrial Practice	2(0-2)	6 & 7

Semester 8

Courses	Credit	Semester
Agroindustrial Capstone Design Project	6(0-6)	8

CURRICULUM

Course Mapping

Semester 6 Electives

Courses	Credit	Semester
Stochastic Quantitative Methods	3(2-1)	6
Logistic System and Supply Chain	3(2-1)	6
Process Engineering of Starch, Sugar, and Sucro-chemical	3(2-1)	6
Fats, Oils, Oleo-chemcal and Emulsion Technology	3(2-1)	6
Transportation and Distribution Packaging	3(2-1)	6
Cleaner Production	3(2-1)	6

Semester 7 Electives

Courses	Credit	Semester
Automatic Process Control	3(2-1)	7
Design of Digital Agroindustrial System	3(2-1)	7
Process and Product Engineering of Fibres, Rubber, and Gum	3(2-1)	7
Skin Processing and Leather Technology	3(2-1)	7
Process and Product Engineering of Alcaloids and Horticultures	3(2-1)	7
Process Engineering of Essential Oils, Spices, and Phytopharmaca	3(2-1)	7
Process Engineering on Bioindustry	3(2-1)	7
Smart and Active Packaging	3(2-1)	7
Wastewater Treatment Engineering	3(2-1)	7
Solid Waste and Hazardous Waste Treatment engineering	3(2-1)	7
Air Pollution Treatment and Control	3(2-1)	7

FACILITIES

Front Part

Theater Class

Green Open Space

Basic of Applied Science Laboratory

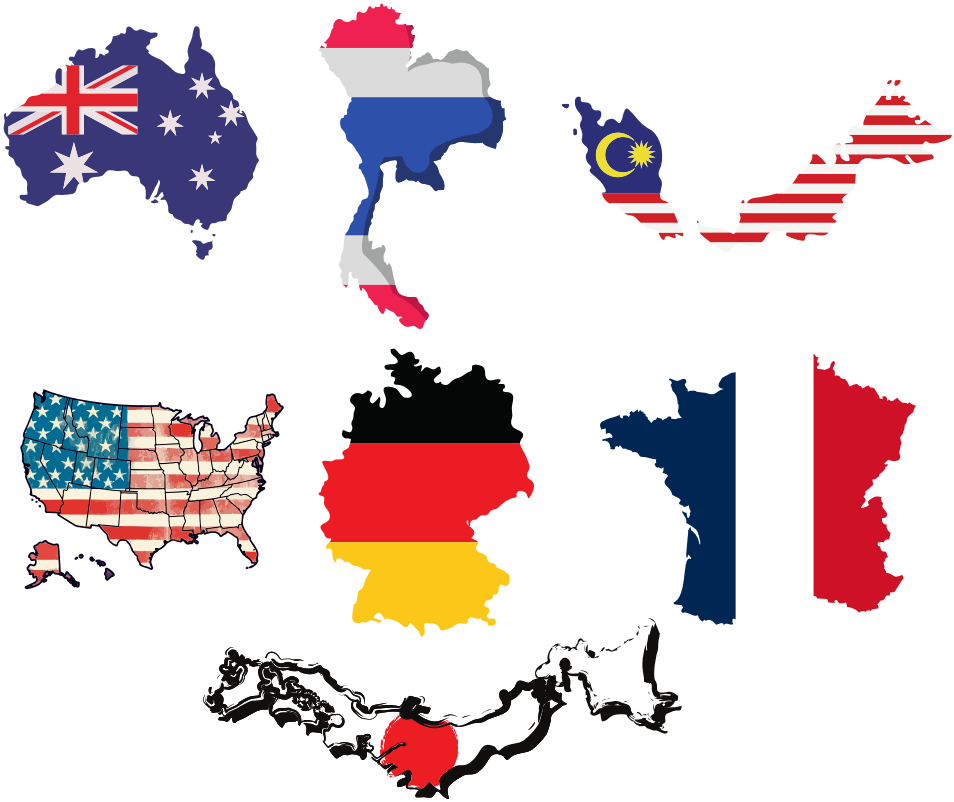
Chemical Laboratory

Instrument Laboratory

INTERNATIONAL COLLABORATION

List of International Collaboration

	Country/Region	Affiliated Partners
Universities	Australia	Adelaide University
	Thailand	Maejo University
	Malaysia	Universiti Putra Malaysia
	United States	Villanova University
	Germany	Rhein Waal University
	French	INSP Tolouse
	Japan	Tokyo University



CONTACT

The Faculty Campus

Situated at IPB University Darmaga Campus, the Agroindustrial Engineering Study Program is located in Darmaga, Bogor. Embraced by the scenic view of Salak Mount, the campus provides an inspiring environment for academic pursuits. With easy access to public transportation of train and highways, the campus is just 60 minute from Jakarta. Students could explore the Sundanese cultural richness while enjoying the tranquility of our campus community. Our strategic location ensures a seamless blend of academic excellence and a vibrant student life.

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