



VISION

SITH as a leading institution for the development of
BIO INDUSTRY

MISSION

Preparing competent human resources that are able to make innovations in biological resources processing to improve the welfare of the society through the implementations of the Three Pillars of Tertiary Education.

STUDY PROGRAMS

Bachelor Degree

Biology

The Undergraduate Program in Biology is accredited by ASIIN-Germany, aims to produce highly qualified graduates with sound knowledge of biology and its integrating principles, who are able to solve problems in life sciences using scientific reasoning and the most current methodological approach. Biology graduates have a broad occupational profile includes researcher, teacher/lecturer, entrepreneur, consultant, mass media practitioner etc.

Bioengineering

The Undergraduate Program in Bioengineering emphasis study on life sciences and engineering principles to design a bio-based production system for high value metabolites in industrial scale. The system includes a biorefinery concepts for high efficiency in use the natural resources. Our graduates are highly competitive in bio-based industry for biochemical, pharmaceutical, and bioenergy.

Forestry Engineering

The Bachelor Degree of Forestry Engineering aims to produce professional forestry engineers who has abilities in forest preservation, manipulating forest elements for sustainable use, and designing and establishing forest. The department combines forestry science and engineering and focuses on utilizing and conserving forest in sustainable manner through innovation using an ecosystem engineering approach.

Biology

The Master Degree of Biology aims to produce master graduates who are excellent in mastering the unifying concept of Biology, System Biology, and Tropical Biodiversity to global challenges through independent research. Our program is supported by Ph.D lecturers who are expert in the above area of research.

Biotechnology

The Master Program in Biotechnology equips students with skills and knowledge, which are applicable for developing bio-based products or systems in the field of agricultural, biomedical, bioindustry, and environmental. The graduates are highly potential to develop their careers as lecturers, researchers and various strategic role in private and public institution.

Doctoral Degree

Biology

The Doctoral Degree of Biology students are trained to become independent researchers in the life sciences. The solve problems through inter-, multi-, or trans-disciplinary approaches, develop new knowledge in the science, applications or engineering of Biology, to produce creative, original, and proven solutions for the benefit of society.

Microbiology

The Undergraduate Program in Microbiology, accredited by ASIIN-Germany, aims to produce competent graduates with robust understanding on basic and applied concepts of the field. Our graduates are prepared to participate in solving microbiology-related issues, highly competitive and also currently contributing in energy, health, cosmetics, food industries and environmental sector.



Lab activity in Microbiology Class

Agriculture Engineering

Agricultural Engineering is an interdisciplinary study that aims to develop self-sufficient food production system through high sustainability utilization of agricultural resources. This study program provide competence for prospective graduates to design an efficient biomass production system which is biologically, technically, and economically feasible on various land and environmental condition.

Postharvest Technology

The Bachelor Degree of Postharvest Technology aims to regulates harvesting, post harvesting, and processing in order to maintain the quality of bioproducts physically, chemically and physiologically. This study program focus to develop post harvest technology in improving local bio-based industry considering local-based knowledge which focused on agro-silvo-fishery field.

Master Degree

Biomangement

The Master Program in Biomangement aims to produce professional experts who are able to manage bioresources/bioproduct in the tropics. The Curriculum provides interdisciplinary approaches within a sustainable development framework to identify problem related to sustainability, utilization, value adding, and conservation of tropical resources on the basis of life sciences; to plan, organize, and evaluate units of tropical resource in management; as well as to develop their own leadership and entrepreneurial capacity independently.



Plant Sciences and Biotechnology

The group currently focuses on the development of new plant materials or products, especially plant secondary metabolites; improvement of plant growth, production, and reproductivity, especially by implementing biotechnology applications; improvement of plant adaptability to environmental stresses, such as draught and salinity; and plant cultivation engineering, covering optimization of growth medium and cultivation techniques.

Research topics: Biofuel production from autotroph microalgae, Polyploidization of orchids, Teak biotechnology, Ecophysiology of sweet potato, Production of agarwood, and Phytoremediation.

Genetics and Molecular Biotechnology

The group actively participates in the exploration and conservation of genetic diversity, gene, and protein function analysis, genetic engineering, synthetic biology, multi-omics (genomics, transcriptomics, nutrigenomics, etc), gene markers for molecular breeding and supported by bioinformatics and big data analysis.

Research topics: Biodiversity, Food Security, Aquaculture, Agriculture, Health and Medicine Biotechnology, and Green Technology Development. (sith.itb.ac.id/KK/GBM)

Agrotechnology and Bioproduct Technology

The group research focuses are Process design for biological conversion of biomass wastes to produce innovative bioproducts and Applying biorefinery concept to increase the added value of biomass wastes

Research topics: Production of various bioproducts from processing of agricultural biomass and Development of integrated system for sustainable agricultural-bioindustry.

Microbial Biotechnology

The group focuses in exploring and characterizing potential microbes, followed by its manipulation or manipulating the system it re- sides. The research are aimed for the application in bioindustry, industrial prototype development or environmental management. The research can be divided into six domains as follows: Nutrition and Pharmaceuticals, Agriculture and Forestry, Aquaculture, Energy, Environment, and Biomaterials.

Top Three Research: Microbial Enhanced Oil Recovery, Standardization and improvement of fermented food and beverage, and Closed System Aquaculture using Hybrid RAS Technology.

Management of Bioresources

The group's main research focus is the implementation of biological principles in resource management through opening up dialogues with other scientific fields (conservation, economics, management, business, and social science).

Research topics: Integrated resources exploitation (conservation) management; Integrated farming management; Integrated market management.

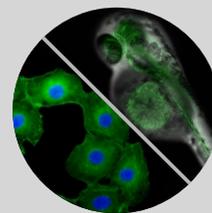
Ecology

The group research focus is oriented towards achieving a healthy and sustainable ecosystem through various approaches, including implementation of fundamental concepts and ecological engineering.

Research topics: Indonesia's biodiversity study; ecosystem functions and processes; shifts in species distribution; application of bio-indicator; conservation; ecosystem rehabilitation.

Physiology, Animal Development, and Biomedical Sciences

The group main research goal is to study the concepts of animal physiology and developmental biology and its application in order to support the advancement of biomedical sciences and be expected to answer the global health and healthcare problems also increasing the life quality of humankind.



Research topics: Behavioral Biology; Medical Entomology; Nutrigenomics, Physiology, and Study of Diseases; Reproductive and Developmental Biology; Cancer Study and Toxicology; Aging and Wound Healing; Stem Cell and Tissue Engineering.



Forestry Technology

The group main research focus is improvement of productivity and efficiency of forest and forest products.

Research topics: Floristic diversity at various types and ecophysiology aspects of forest; Improvement of genetic material of commercial tree species; Development of intensive and low-cost silviculture; Improvement of quality and durability of timber; Modification of timber and non-timber forest products.