



UNIVERSITAS
INDONESIA

FMIPA



ASEAN
University
Network



FACULTY OF MATHEMATICS AND NATURAL SCIENCES UNIVERSITAS INDONESIA

"Innovative, Smart and Competitive"

Departments:

- Mathematics
- Physics
- Chemistry
- Biology
- Geography
- Geoscience



PT. DQS Certification Indonesia
(DQS Holding GmbH)



www.sci.ui.ac.id

About Us



The Faculty of Mathematics and Natural Sciences Universitas Indonesia

At the beginning of its establishment, FMIPA UI was known as the Faculty of Sciences and Natural Sciences (FIPIA) which was born on December 21, 1960 based on the Decree of the Minister of Education, Teaching, and Culture of the Republic of Indonesia No. 108049/U.U..

In its development, the name FIPIA was later changed to Faculty of Mathematics and Natural Sciences (FMIPA). This name change was made in 1982 on the basis of Government Regulation No. 27 of 1981, dated August 14, 1981 (State Institution No. 41), concerning the arrangement of faculties at state universities and institutes. This regulation was later strengthened by Presidential Decree No.44 of 1982, dated 7 September 1982, concerning the organizational structure of the University of Indonesia.

FMIPA UI has departments of Biology, Physics, Mathematics, Chemistry, and Geography. In 2015 the Geosciences study program was opened, so that currently FMIPA UI has 5 departments namely the Departments of Mathematics, Physics, Chemistry, Biology, Geography and one Geosciences Study Program.

So that currently FMIPA UI has 21 study programs consisting of 9 undergraduate programs (S1), 8 master programs (S2) and 4 doctoral programs (S3) with two lecture locations namely at the Depok Campus and Salemba Campus.

About Us

Faculty Leaders



Prof. Dede Djuhana, Ph.D.
Dean



Prof. Dr. rer. nat. Budiawan
Vice Dean for Education, Research
and Student Affairs



Dr. Tito Latif Indra, M.Si.
Vice Dean for Resources, Venture
and General Administration

Vision

Realizing the Faculty of Mathematics and Natural Sciences, Universitas Indonesia (FMIPA UI) as the best center for knowledge and innovation in the fields of science and mathematics, which is able to compete internationally and assists Indonesia's development.

Mission

- Become a driving force in increasing the quality and quantity of Tridharma activities in higher education that are innovative, high quality and beneficial to society.
- Creating a collaborative, synergistic, transparent, and accountable academic environment.
- Improving and strengthening the academic atmosphere for the better.
- Realizing the Faculty of Mathematics and Natural Sciences, Universitas Indonesia (FMIPA UI) as a center for the best talents in the fields of science and mathematics who have international competitiveness and are able to contribute to sustainable development.

FMIPA UI latest



3925

Active Students
2022/2023



172

Active Lecturer



23.500+

Alumni



135

Academic Staff



27

Professor



#151-200

QS WUR by Subject 2023
Geography



#501-550

QS WUR by Subject 2023
Physics and Astronomy



#551-600

QS WUR by Subject 2023
Biological Sciences



#501-530

QS WUR by Subject 2023
Mathematics

Accreditation

All study programs at FMIPA UI are nationally and internationally accredited.

National Accreditation



International Accreditation



Department Leaders

Department of Mathematics



Prof. Alhadi Bustamam, Ph.D.
Head of Department

Study Programs

- Undergraduate Program in Mathematics
- Undergraduate Program in Statistics
- Undergraduate Program in Actuarial Science
- Master Program in Mathematics

Department of Physics



Dr. Djati Handoko
Head of Department

Study Programs

- Undergraduate Program in Physics
- Master Program in Physics
- Master Program in Materials Science
- Master Program in Medical Physics
- Doctoral Program in Materials Science
- Doctoral Program in Physics

Department of Chemistry



Dr. Asep Saefumillah
Head of Department

Study Programs

- Undergraduate Program in Chemistry
- Master Program in Chemistry
- Doctoral Program in Chemistry

Department of Biology



Prof. Anom Bowolaksono, Ph.D.
Head of Department

Study Programs

- Undergraduate Program in Biology
- Master Program in Biology
- Master Program in Marine Science
- Doctoral Program in Biology

Department of Geography



Dr. Supriatna, M.T.
Head of Department

Study Programs

- Undergraduate Program in Geography
- Master Program in Geography

Study Program Geoscience



Dr. Eng. Supriyanto
Head of Study Program Geophysics



Reza Syahputra, Ph.D.
Head of Study Program Geology

UNDERGRADUATE PROGRAM

- Undergraduate Program in Mathematics
- Undergraduate Program in Statistics
- Undergraduate Program in Actuarial Science
- Undergraduate Program in Physics
- Undergraduate Program in Chemistry
- Undergraduate Program in Biology
- Undergraduate Program in Geography
- Undergraduate Program in Geology
- Undergraduate Program in Geophysics



Department of **MATHEMATICS**



LAMSAMA Accreditation : A (Excellence)
AUN-QA Assessment : 5 (out of 7)
ASIIN Accredited

Mathematics is one of the most essential and long lasting fields of study which has continuously provide knowledge and tools in expanding number of disciplines and professions. The scope of mathematics applications has consistently evolved and increased beyond their traditional areas in physical sciences and engineering.

Modern and advances in computational and scientific technology which create a massive production of data has expanded the need of mathematics, statistics, modelling and computational skills. Moreover, it can be

used to analyze and solve problems in wide areas such as information technology (IT), weather forecasting, finance, economics, data science, actuarial as well as molecular biology and medical science.

Department of Mathematics aims to be leading institution to provide the graduates with its competences to contribute in development and ... mathematical knowledge, applications and tools in order to solve problems in advancing science and technology, and quality of human life.

There are some major skills which allow our graduates to support their future career such as logical analysis skill, quantitative and abstract reasoning, mathematical model development, critical thinking and problem solving, also computational skills, data analysis and interpretasi, statistical analysis, multidiciplin research skills.

In Bachelor Program, students require a minimum 144 credits, divided into core and elective courses to fulfill their bachelor degree. The Bachelor Program consists of three Study Programs including:

- Undergraduate Program in Mathematics
- Undergraduate Program in Statistics
- Undergraduate Program in Actuarial Science

Bachelor of Science in Mathematics

This program has three concentration including Pure Mathematics, Computational Mathematics and Operation Research. In Computational Mathematics we have special interest research groups such as Bioinformatics and Advanced Computing, Data Science, Data Security, Biomathematics, and Scientific Computing.

Bachelor of Science in Statistics

This program has two concentrations including Pure Statistics, and Applied Statistics.

Bachelor of Science in Actuary

This program has three concentrations including Life Insurance, General Insurance, and Risk Management.



Degree :
Sarjana Sains
(Bachelor of Science)



Depok
Campus



Length of Study :
8 Semesters



Language :
Bahasa
Indonesia

CAREER OUTLOOK

The bachelor program graduates pursue careers in related works in private and public sectors including IT and communication, manufacturing industries, insurance, finance and banking, business and management, consulting firm, energy, transportation, data science, actuarial educations, health & medicine, educations, and research institutions.





Department of **PHYSICS**



Accreditation : A (Excellence)
AUN-QA Assessment : 5 (out of 7)
ASIIN Accredited

Boasting an excellent program, the Department of Physics is a center of physics education and applied physics research. Besides contributing to the education and research activities, many graduates have contributed to the world of global industries by joining many national and multi-national companies.

The Department of Physics has a wide cooperation with a number of industries, international and government affiliations which is aimed to create a mutual partnership that enables both parties to upgrade the competency of physics graduate, to develop

core knowledge in physics and to actualize academic contribution for community development.

In its bachelor program, the Department of Physics has four concentrations:

- Nuclear and Particles Physics
- Materials and Solid Substance Physics
- Electronic and Instrumentation Physics
- Medical Physics and Biophysics

Nuclear and Particle Physics focus on developing analytical skill with competency not only in elementary particle and nuclear theory but also in analysis and prediction of natural disasters. Competency in this area includes Nuclear Technology and Application, Quantum Mechanical and Non Relativistic, Numerical Analysis and Computer Programming.

Materials and Solid Substance emphasizes on identifying and modifying materials engineering with good quality in practical experience and strong basic science comprehension in Competency in Materials Nanotechnology, Physical Chemistry, Special Materials, Materials Engineering and Special Competence according to interest field.

Electronic and Instrumentation Physics concentration is to develop competencies in analyzing, duplicating, modifying, developing, designing and making prototype of tools for scientific electronic instrumentation and industry. The area of competency covers Sensor and Its Application, Measuring and Interfacing, Microprocessor, Computer (Hardware and Programming), Metrology, Digital and Analog Signal Processing and Instrumentation for Measuring Physics Unit.

Medical Physics and Biophysics is focused to optimize their application in the health sector

that relates to nuclear radiation, X-ray, ultrasonic, magnetic and laser resonant especially for diagnostic interpretation and oncology therapy. The students will obtain competencies in the field of Radiotherapy, Medical Diagnostic Interpretation, Nuclear Medicine, Radiation Biology and Medical Instrumentation.

CAREER OUTLOOK

A degree in Physics offers many career prospects in education and academic research, laboratories, hospital laboratories, meteorology & geophysics agency, and air transportation companies.



Degree:
Sarjana Sains
(Bachelor of Science)



Depok
Campus



Length of Study:
8 Semesters



Language:
Bahasa Indonesia





Department of **CHEMISTRY**



Accreditation : A (Excellence)
AUN-QA Assessment : 5 (out of 7)
Royal Society of Chemistry

Chemistry is a study of molecules and how they interact. The students whom fitted out with this knowledge, could produce new substance, materials and to over come the problem.

Chemists are often at the forefront of the new apotec development. It may be closely involved in the search for new materials with special properties. It regularly contribute to a more sustainable world with smart solutions for energy generation.

The Department of Chemistry has five concentrations: Physical Chemistry, Organic Chemistry, Inorganic Chemistry, Analytical Chemistry, and Biochemistry

Physical Chemistry is a study of macroscopic, atomic, subatomic, and particulate phenomena in chemical systems in the principles terms, practices and physics concepts such as motion, energy, force,

thermodynamics, quantum chemistry, statistical mechanics, analytical dynamics and chemical equilibrium.

Organic Chemistry is a sub discipline of chemistry which involve the scientific study of the structure, elucidation properties, organic compounds reactions and organic materials, i.e. various forms materials that contains carbon atoms. Study of structure includes many physical and chemical methods to determine the chemical composition and the chemical constitution of organic compounds and materials.

Inorganic Chemistry is related to the synthesis and behavior of inorganic and organo metallic compounds. This field covers all chemical compounds except the myriad organic compounds, as subjects of organic chemistry. The distinction between the two disciplines is far from absolute, as there is much overlap in the subdiscipline of organometallic chemistry. It has applications in every aspect of the chemical industry, including catalysis, materials science, pigments, surfactants, coatings, medications, fuels, and agriculture.

Analytical Chemistry focuses on studies using instruments and methods to separate, identify, and quantify matter. In practice separation, identification or quantification can be done using the entire analysis

or combination with other methods. Separation isolates analytes. Qualitative analysis identifies analytes, while quantitative analysis determines the amount or concentration of materials.

Biochemistry, sometimes it called as biological chemistry, is a study of chemical processes within and related to living organisms. By controlling information flow through biochemical signaling and the flow of chemical energy through metabolism, biochemical processes increase the complexity of life. Over the last two decades, biochemistry has become so successful in explaining living processes. Now it almost cover all areas of the life sciences from botany to medicine and genetics which are engaged in biochemical research. Today, the main focus of biochemistry is how to understand chemical role in biological molecules give to the processes that occur within living cells, which in turn relates greatly to the study and understanding of tissues, organs, and whole organisms.

CAREER OUTLOOK

As a chemist, you will have excellent career prospects. Such as in a variety of areas, as food industries, health care, environmental inspection, education, etc.



Degree :
Sarjana Sains
(Bachelor of Science)



Depok
Campus



Length of Study :
8 Semesters



Language :
Bahasa
Indonesia





Department of **BIOLOGY**



Accreditation : A (Excellence)
AUN-QA Assessment : 5 (out of 7)
ASIIN Accredited

The Department of Biology FMIPA UI provides a challenging field of research and education which covers knowledge on life science, focusing on biodiversity and conservation issues. Formerly, it was known as the Department of Biology FIPIA UI. Under a provision of education, the Department of Biology FMIPA UI has experienced three periods: a period in Bogor (1961-1975), a period in Jakarta (1975-1987), and a period in Depok (starting the academic year 1987/1988 until present).

Until 1987, the Department of Biology has been developed five laboratories, they are Taxonomy Lab, Physiology Lab, Microbiology Lab, Ecology Lab, Anatomy

Lab, and Histology & Embryology Lab. While moving to Campus UI Depok, the Department of Biology had 2 additional labs: Genetic Lab. and Marine Biology Lab.

By the year of 2015, the Department of Biology reconstructed 7 laboratories into 3 Science Groups: Zoological Science Group, Botanical Science Group, and Microbiological Science Group. These 3 Science Groups provide class and practical courses for students which are designed in the curriculum of Undergraduate Study Program, Master Study Program, and Doctor Study Program hosting by the Department of Biology. There are 10 research groups that provide topics for students of each study program

in the Department of Biology, like a : Animal Science for Health, Chemical Ecology, Coastal & Marine Resources, Environment and Management Landscape Genetics, Reproductive Genetics, Terrestrial-Aquatic Ecosystem, Conservation & Environmental Services, Plant Genetics Development and Biosystematics, Plant Physiology & Natural Resources, Microbial Systematics & Ecology, Microbial Technology and Prospecting. For advancing research activities, the Department of Biology has 3 research clusters (approved by Decree Rector of Universitas Indonesia) that provide multidiscipline topics which are covered by the available research groups: Bioprospecting for Sustaining Nature (Bio-SN), Bio Environmental Genomics (BEG), Reproduction Bioresources Sustainability (Red-BUS).

The Department of Biology has various facilities for academic activities such as research laboratories, teaching laboratories, green house, orchid house, microalgae culture house, rodent care house, and microorganisms Culture Collection of Universitas Indonesia. In addition, the Department of Biology has a strong collaboration with many institution, most of them are lead by alumni of biology UI.

Biology Undergraduate Study Program

The curriculum of the study program is designed to prepare students with an adequate competence of knowledge and basic skill to do a research in Biology fields, with special emphasize in the biodiversity and conservation topic. Students have to earn at least 144 credits for 8 semesters and normally take 4 years of study. They are introduced with a specific research



topic provided by the existing 10 Research Groups as described above. The students also have an opportunity to perform their interested research topic in other research institution of which the main supervisor should be come from the Department of Biology, FMIPA UI.

Beside formal academic activities, students are also provided with practical knowledge about biodiversity and conservation along with leadership soft skill under 3 student specific interest organizations: BSO Comata which interested in wildlife terrestrial animals, BSO Canopi which interested in plant biodiversity, and BSO Sigma which interested in wildlife marine biotas.

CAREER OUTLOOK

Graduates of this program have the theoretical and practical skills to pursue future career in ecology conservation, wild life and forestry conservation and microbiology research both in private and governmental sectors.



Degree :

Sarjana Sains
(Bachelor of Science)



Depok
Campus



Length of Study :
8 Semesters



Language :
Bahasa
Indonesia





Department of **GEOGRAPHY**



Accreditation : A (Excellence)
ASIIN Accredited

Geography is a study of which involve interaction between human and Earth including its lands, features, inhabitants and phenomena in a spatial perspective which creates a particular pattern.

The Geography Study Program consists of three concentrations: Physical Geography, Regional Planning, also Geographical Information System and Remote Sensing. The department has three laboratories to support its academic activities :

- The Geographical Information System and Remote Sensing Laboratory
- The Physical Geography Laboratory
- The Regional Planning Laboratory

The library reserves more than 10,000 books, topography and landscape references in the form of digital and hard copy collection.

Three research focuses in Geography consist of Physical Geography, Human Geography, and Geographic Information System and Remote Sensing.

Physical Geography includes the climate topic (variability and change), water resources (for availability and variability) and dynamic landscape (land dynamics landscape), in watershed and coastal region. The research topic emphasize the fundamental understanding of variability in space and time, climate elements, hydrology and landscapes of Earth, space relation with humans and its activities.

Human Geography and regional development are emphasized on related topic on human relationship and with environment, and the transformation of living space. Also include the management of resources & quality of life, environmental change & adaptation capacity, the dynamics of cultural and eco-sustainable consumption, as well as the identity of place and space competition.

Geographic Information Systems and Remote Sensing focused on research related to the application of GIS/Remote Sensing for environmental monitoring, estimation of biomass and carbon stock, and GIS Modeling.

CAREER OUTLOOK

The study of Geography leads to the development of a comprehensive understanding and practical competence in regard to different kinds of phenomena such as applicable in various professional careers, such as regional planning and development, surveying and mapping, environmental management, forestry, mining and energy exploration, transportation, etc.



Degree :

**Sarjana Sains
(Bachelor of Science)**



**Depok
Campus**



Length of Study :
8 Semesters



Language :
**Bahasa
Indonesia**



A large offshore oil rig is shown in the middle of a deep blue ocean under a clear blue sky. The rig has a tall derrick and a helipad on its deck.

Department of **GEOSCIENCE**



LAMSAMA Accreditation : B (Good)

Department of Geoscience

Our department offers two kinds of program about the earth science, there are Geology and Geophysics. The lecturers and students work together through the cutting-edge research to solve problems in Geosciences, especially related to natural resources, disaster, and environmental issues. Most of our activities involve detail observation mapping and data acquisition in the real practical or the laboratory. The Geoscience Department has collaborative partnership with some industries and government affiliations which is aimed to update the knowledge and upgrade the student's competency in Geosciences.



Geology

The bachelor of geology is designed to analyze the on going proses, the one that happen, or will occur in the future. Our undergraduate students will be able to explain the fundamental concept of geology and the geological object with its process in particular area. Beside that, they also have the skill to collect, to process, to make model on the data, and to integrate it with other geosciences data. Our research is also focusing in the past, now, and the future prediction for natural resources, natural disaster mitigation, and environmental problems.

Geophysics

The bachelor of geophysics is aimed to analyze the problem related with natural resource, natural disaster, and environment using geophysical methods. They are trained to solve Geoscience problems analytically and numerically by collecting, processing, and modeling the geophysical data. Moreover, our students are able to incorporate geophysics data with other geosciences data and apply it for Earth's issues.

Research Interest

Our lecturers and students involve in some cutting-edge research related with diverse magnitude of field, such as Geopark, volcanology, sedimentology, seismotectonic, from the big scale as tectonic plate to the small scale like microfossil.

Our previous research was about Merangin Geopark and how to enhance the geodiversity and propose Merangin as a UNESCO Global Geopark.



We used various approaches, such as seismotectonic, sedimentology, GPR, and reconstruction of Tethys plate. We also conducted other research in the unstable soil region using engineering geology such as: determination of landslide slip surface, soil crack investigation by GPR method, and study about the role of ground water fluctuation that cause landslide. Futhermore, we obtain data about sedimentation of oil and gas reservoir which are covered by volcanic activity and interpreted by geophysics instrument, for example vibroseis, magnetic, gravity, resistivity measurement, and passive seismic.

Research Location

The great geodiversity of indonesia will always be a part of challenges for worldwide gelologist that can be studied. Thus, our research covered diverse scope of geological setting from Merangin Geopark in Jambi, Cianjur, Pagelaran, until some geological feature in West Java. The future studies will cover more detail study in Merangin Geopark, landslide, and channel-fill caused by turbidity current, and Sedimentation related to volcanic activity in West Java.



Degree :
Sarjana Sains
(Bachelor of Science)



Depok
Campus



Length of Study :
8 Semesters



Language :
**Bahasa
Indonesia**



Laboratory Facilities

All of the studies had been done using many equipment and with the contribution from our personal assitants and students.

CAREER OUTLOOK

Graduates from geology and geophysics will have opportunity to work in natural resources, energy exploration and exploitation, environment, natural disaster mitigation, the government and other geoscience institution.



MASTER'S PROGRAM

- Master Program in Mathematics
- Master Program in Physics
- Master Program in Materials Science
- Master Program in Chemistry
- Master Program in Biology
- Master Program in Marine Science
- Master Program in Geography
- Master Program in Medical Physic



Depok
Campus



Length of Study :
3-6 Semesters
(42 Credits)



Language :
Bahasa
Indonesia

Master Program in

MATHEMATICS



Degree :

Magister Sains
(Master of Science)

Master Program
by Course & by Research



Accreditation :
Excellent

In Master Program, the students need to obtain 42 credits. It consists of core and elective courses in each concentration, to fulfill their Master degree.

Department of Mathematics provides this master program to respond the increasing demand of mathematicians in a wide areas of private and public sectors such as industry, finance, information technology, business, health and medicine, and services sectors. The objective of this study program is to provide our graduates with high level of competency in mathematics and its applications, strong research skills in mathematics to contribute in enhancing science, technology and other fields.

Currently, Master Program consists of a study program Master of Science in Mathematics. We offer

two optional tracks for the students to pursue their master study including : **(1) Master by Research Program**, and **(2) Master by Course and Research Program**. Furthermore, there are three concentrations in Master Program including Pure Mathematics, Data Analysis, and Modelling.

CAREER OUTLOOK

The master program graduates pursue careers in private and public sectors such as IT and communication sectors, manufacturing industries, insurance, finance and banking sectors, business and management, consulting, energy sectors, transportation, data science, health and medicine, educations, and research institutions.



Master Program in **PHYSICS**



Degree:
Magister Sains
(*Master of Science*)

Master Program
by Course & by Research

The Department of Physics has an objective to provide high quality education for students who wish to deepen their knowledge in physics.

The curriculum for The Master of Science in Physics Program is designed to produce graduates that are capable of: Developing physics in order to be recognized globally, Solving the problems in the community which are related to physics by using inter- and multi discipline approaches, Communicating the results of the faculties thoughts to the community both orally and in writing and adapting to the development of science and technology through the process of self-sustaining and independent learning

Currently, this program provides four special interests : Pure Physics and Applied Physics, Reservoir Geophysics, Geothermal Exploration, Instrumentation Physics.

CAREER OUTLOOK

This master program graduates pursue higher careers or specialized field in education and academic research, laboratories, meteorology and geophysics agency, manufacturing companies and transportation companies.



Accreditation : A



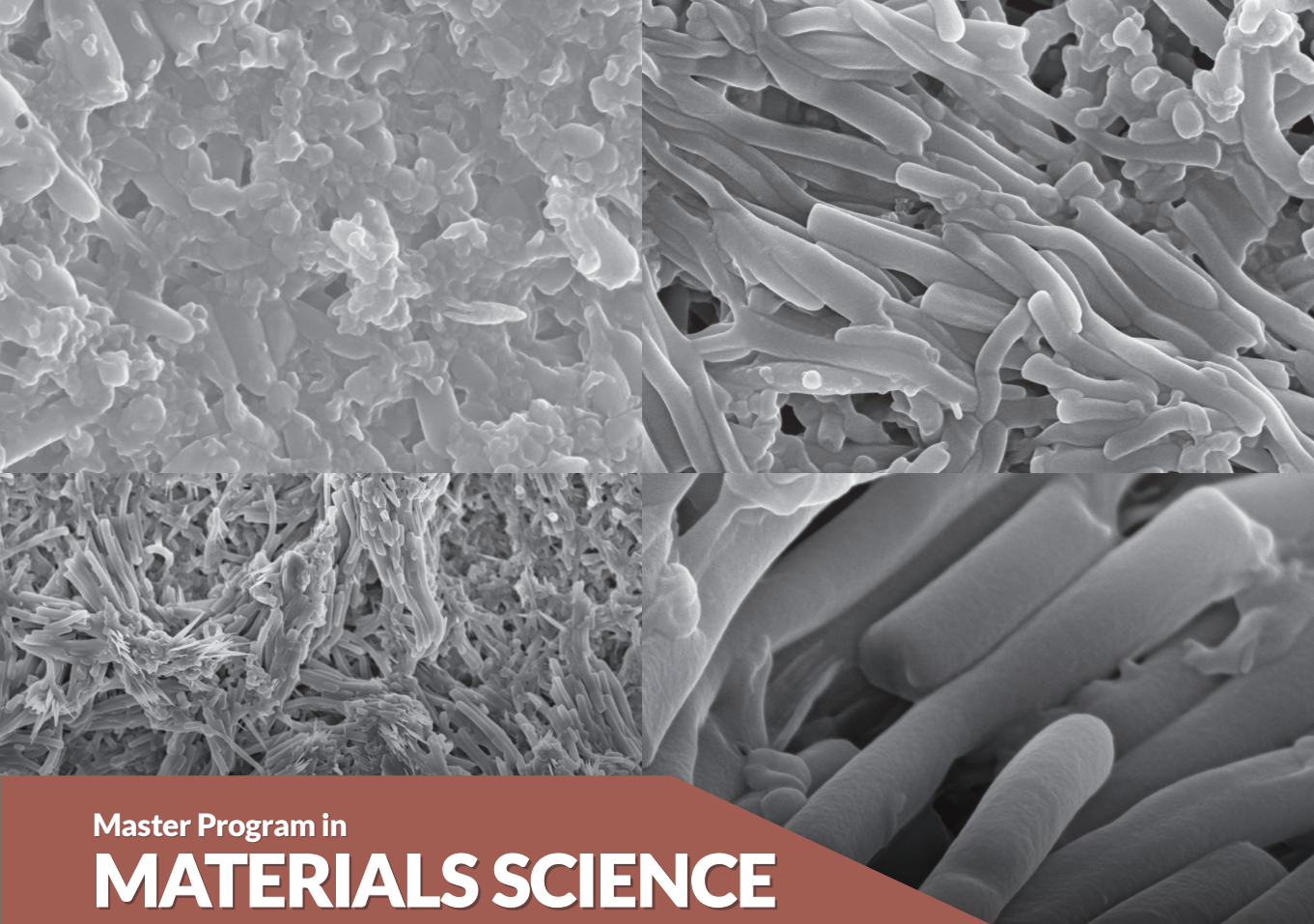
Depok Campus



Length of Study :
4 Semesters
(42 Credits)



Language :
Bahasa
Indonesia



Master Program in **MATERIALS SCIENCE**



Degree:

Magister Sains
(Master of Science)

Master Program
by Course & by Research

This program also provides students with knowledge of science and materials engineering with focused on metal, ceramic, composite, polymer, electronic and also magnetic materials. The graduate student can analyze the progress of science and technology of materials, to analyze specific problems in materials science through research activities independently and/or in groups by scientific ethics, capable of communication and dissemination. The result of community research in material science, can be applied in the form of prototypes that are beneficial to the public and material science, and the concept of entrepreneurship can be used in solving the problem of business management fields of the material.

Our program has four concentrations: Polymer & Composite, Metal & Alloy, Ceramic & Glass, and Electronic & Magnetic Materials.

CAREER OUTLOOK

This master program pursue higher careers or specialized field in education and academic research, laboratories, manufacturing companies, transportation companies, heavy machinery or construction industries.



Accreditation :
Excellent



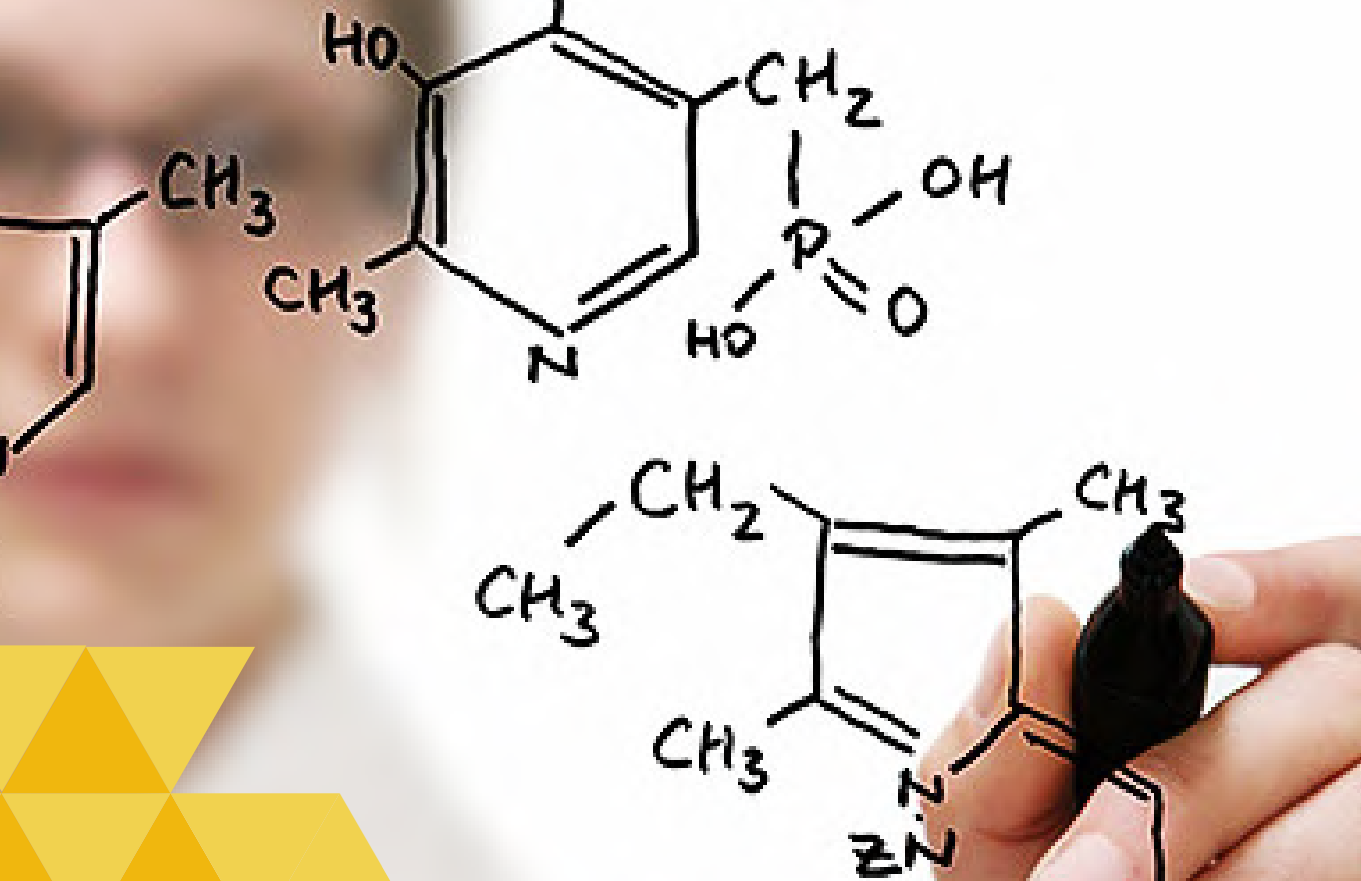
Depok Campus



Length of Study :
4 Semesters
(42 Credits)



Language :
Bahasa
Indonesia



Master Program in **CHEMISTRY**



Degree:
Magister Sains
(Master of Science)

Master Program
by Course & by Research

The Master Program of Chemistry aims to nurture chemists with special ability. A chemists who are advanced at applying chemistry and actively also involved in efforts to increase public service. The curriculum is oriented to chemical research and its application.

CAREER OUTLOOK

This master program graduates pursue higher careers or specialized field in education and academic research, food industries, pharmaceutical companies, petrochemical industries, farm products development and environmental management.



Accreditation : Excellent
Fully Accredited by
Royal Society of Chemistry
(RSC)



Depok
Campus



Length of Study :
4 Semesters
(40 Credits)



Language :
Bahasa
Indonesia



Master Program in **BIOLOGY**



Degree :
Magister Sains
(*Master of Science*)

Master Program
by Course & by Research



Accreditation : A



Length of Study :
4 Semesters
(41 Credits)



Language :
Bahasa
Indonesia



Depok
Campus

This study program tries to attract fresh graduated students or professional researchers to get a master degree. The curriculum is designed to prepare students with a high level competence of knowledge and excellent skill to do and manage a research in the field of Biology, with special emphasize to the topic of biodiversity and conservation. Students must have a prior chosen topic related to 10 Research Groups in the Department of Biology FMIPA UI as described above. Students must earn at least 41 credits for 4 semesters where normally

take 2 years of study. Besides doing a research, in the Department of Biology laboratories, the students can also do their interested research topic in other research institution laboratory.

CAREER OUTLOOK

This master program graduates pursue higher careers or specialized field in education and academic research, ecology and wildlife conservation, forestry, farm products development, environment management.



Master Program in **MARINE SCIENCE**



Degree:
Magister Sains
(Master of Science)

**Master Program
by Course & by Research**

In order to develop ability and competitiveness in marine science, the master program of Marine Science aims to enhance the knowledge and ability of its student in specialization of marine science. The graduate students of this program are expected to be able to conduct research, to manage, to conserve marine resources, to cooperate in planning and developing marine science. This program provides three special interests: Marine Physics Science, Marine Biology Science, and Coastal Management.

CAREER OUTLOOK

Our graduates pursue higher careers or specialized field in education and academic research, government office, marine-focused company, marine resource management, and conservation foundation.



**Accreditation:
Excellent**



**Depok
Campus**



**Length of Study:
4 Semesters
(42 Credits)**



**Language:
Bahasa
Indonesia**

Imagery from Landsat Jakarta 2004

Master Program in **GEOGRAPHY**



Degree:

Magister Sains
(Master of Science)

Master Program
by Course & by Research



Accreditation : A



Length of Study:
4 Semesters
(42 Credits)



Language:
Bahasa
Indonesia



Depok
Campus

The graduates of this program are expected to have the ability to apply and develop spatial analysis for any aspect in regional perspective. This course provides an advanced study in the area of geography. Delete "has been accredited (A).

CAREER OUTLOOK

This master program graduates pursue higher careers or specialized field in regional planning and development, environmental management, forestry, mining and energy exploration, transportation management, etc.



**Accreditation : B
(Good)**



**Length of Study :
2-6 Semesters
(36 Credits)**



**Language :
Bahasa
Indonesia**



**Depok
Campus**

Master Program in **MEDICAL PHYSICS**



**Degree :
Magister Sains
(Master of Science)**

**Master Program
by Course & by Research**

Master of Medical Physics Program FMIPA UI is the first master Medical Physics Study Program in Indonesia.

Vision

To be a center of excellence in research, education, and training in medical physics in the national and international level.

Mission

To develop the highest quality programs of teaching and research and to produce medical physics graduates to fulfill national and international demand

Prospectus

Alumnae of our programs primarily excel in their careers as clinical medical physicist, radiation protection expert, state regulatory, national bureaucrats, as well as

academics and researchers dealing with the advancing world of medical physics. Career as produce experts at medical devices companies are promoting as well.

Facilities

Students are entitled to all the facility of the Departement facility, and university. Access to library and online literatures (academic journal) are provide. The laboratories provide access for students to devices and tools for research. The equipment and practical are managed in 5 laboratories :

- Radiation Physics Laboratory
- Medical physics Laboratory
- Treatment Planning Laboratory
- Computational Medical Physics Laboratory
- Biophysics Laboratory



DOCTORAL PROGRAM

- Doctoral Program in Biology
- Doctoral Program in Chemistry
- Doctoral Program in Materials Science
- Doctoral Program in Physics



Doctoral Program in **BIOLOGY**



Degree:
Doctor

**Doctoral Program
by Course & by Research**



**Accreditation :
Excellent**



**Length of Study:
6 Semesters
(50 Credits)**



**Language :
Bahasa
Indonesia**



**Depok
Campus**

This study program attract graduated master students or professional researchers to get a Doctor degree. The curriculum of this study program is designed to prepare students with an advance competence of knowledge and excellent research skill. It also create a novelty finding in the field of Biology, with special emphasize to the topic of biodiversity and conservation. Students must have a prior chosen topic related to by the existing 10 Research Groups in the Department of Biology FMIPA UI as described above. Students must earn at least 50 credits for 6 semesters where

normally take 3 years of study. Besides doing a research in the Department of Biology laboratories, the students can also do their prior chosen topic research in other research institution laboratory.

CAREER OUTLOOK

The graduates of this program have a wide range career opportunity in biological field in academic, research institutions or industries, as scientists, healthcare professionals, and lecturer in universities.



Doctoral Program in **CHEMISTRY**

The objectives of this program are to equip students who pursue career in academic or industrial research with the required knowledge and skills. The study prepares students to have competence in solving problems in chemistry field, as innovator in chemistry, and able to develop their knowledge and skills in their field by conducting research for industry such as quality control or assurance, management process and production, research and development, technical representative, and service in academic or business. This program offers several specializations such as biological chemistry, non-biological chemistry and biotechnological industry.

CAREER OUTLOOK

The graduates of this program have a wide range career opportunity in chemistry field in academic or industries and as lecturer in universities.



Degree:
Doctor

**Doctoral Program
by Course & by Research**



**Accreditation :
Excellent**



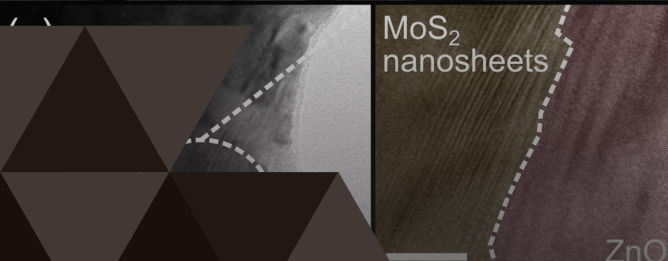
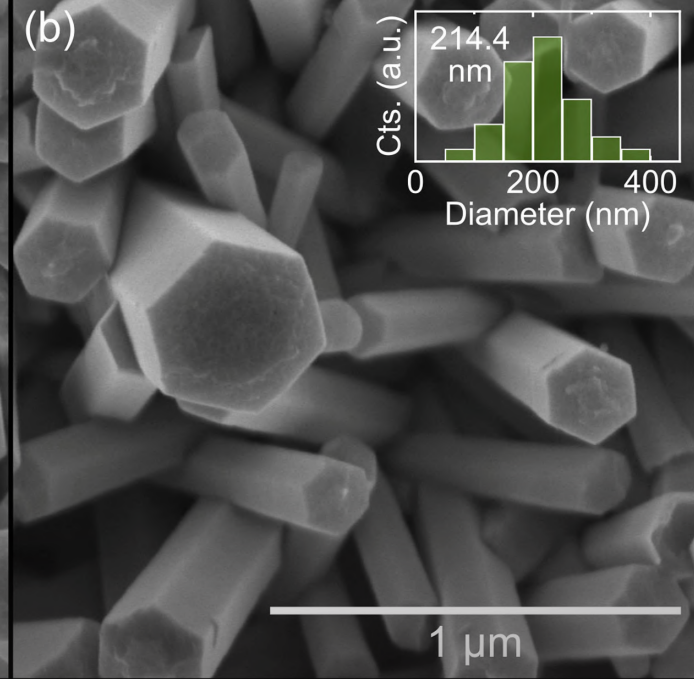
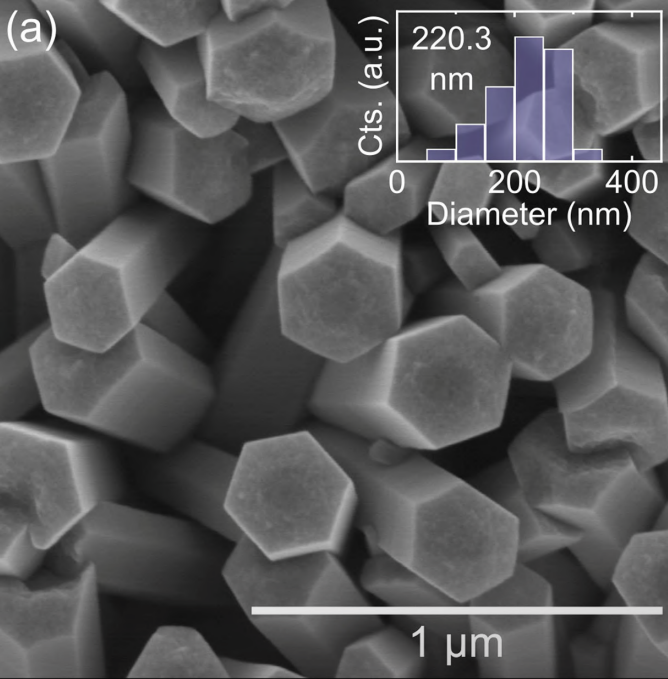
**Depok
Campus**



**Length of Study :
6 Semesters
(50 Credits)**



**Language :
Bahasa
Indonesia**



Doctoral Program in MATERIALS SCIENCE



Degree:
Doctor



Accreditation: **A**



Length of Study:
**6 Semesters
(50 Credits)**

**Doctoral Program
by Course & by Research**

The students are welcome to choose one of the four specializations: Metal & Alloy, Polymer & Composite, Ceramics, and Electronic & Magnetic Materials. The graduates are expected to have competence in conducting research in related field by using general physics concept and finding new material. The graduates students are able to formulate answers to problems in the field of science and technology of materials using interdisciplinary and multidisciplinary approach. They are also able to devise a research programme complies

using the scientific ethic, dissemination research results in national and international materials community, an to creating a new science and technology in the field of materials science that will benefit mankind.

CAREER OUTLOOK

The graduates of this program have a wide range career opportunity in material field in academic, research institutions or industries, as scientists, or lecturer in universities.



Depok Campus



Accreditation :
Good

Language :
Bahasa Indonesia



Doctoral Program in **PHYSICS SCIENCE**



Degree :
Doctor



Length of Study :
6 Semesters (50 Credits)

**Doctoral Program
by Course & by Research**

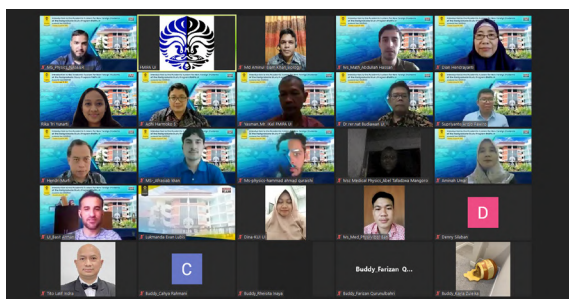
The program Doctor of physics have five research field group, that is Theoretical Nuclear and Particle Physics, Condensed Matter Physics, Instrumentation Physics, Medical Physics & Biophysics, and Geophysics. The Doctor in Physics curriculum is competency based which is commensurate with the Indonesian National Qualification Framework (KKNI) Level 9. The curriculum is designed to produce graduates who are able to develop physics and their applications through nationally and internationally recognized research with a multidisciplinary, interdisciplinary and transdisciplinary approach.

CAREER OUTLOOK

The graduates of this program have a wide range career opportunity in Create innovative, original and tested works through research in the field of physics and its applications, Develop science and technology through research in physics and its applications, Disseminate research results in the field of physics so as to gain national and international recognition, and Solve the problems of science and technology in the community with the principles of physics and communicate the results to the community.



FMIPA UI International Program



FMIPA UI Foreign Student Program

In 2022 FMIPA UI received 7 foreign students from Pakistan, Zimbabwe, Cambodia and Tanzania to take part in the UI GREAT program (UI Foreign Student Candidate Scholarship Program). In addition, FMIPA UI also received 3 foreign students from the Developing Country Partnership (KNB) Scholarship program of the Ministry of Education and Culture of the Republic of Indonesia.

Program UI Creates Credit Transfer in Medical Physics

Master of Medical Physics Study Program FMIPA UI in the University of Indonesia Credit Earning for Students Program (UI-CREATES) received 11 foreign Postgraduate Program students consisting of 7 Students from Universiti Malaya, Malaysia, 2 Students from Universiti Putra Malaysia, and 2 Students from Universiti Sains Malaysia.



FMIPA UI Student Mobility Program

FMIPA UI implemented a student mobility program in 2022 to several universities in Malaysia such as Universiti Teknologi Petronas (UTP), Universiti Malaya (UM), and Universiti Putra Malaysia (UPM).



FMIPA UI receives 292,717 Euro grant from DAAD



The Department of Physics FMIPA UI through the Medical Physics and Biophysics Science Group received international funding of 292,717 Euros or approximately 5 billion rupiah from (Deutscher Akademischer Austauschdienst) or the German Academic Exchange Service and the UI Medical Physics and Biophysics Science Group collaborated with Ulm University Germany.



FMIPA UI Community Service Program

Biodigester Laboratory of FMIPA UI

The Universitas Indonesia collaborated with PT Paiton Energy in the creation of a Biodigester Laboratory at the Universitas Indonesia. This cooperation aims to realize the concept of an environmentally friendly Universitas Indonesia through the application of the waste to energy concept. This activity is entrusted to FMIPA UI in its implementation and utilization in the parangtopo laboratory of FMIPA UI.



Until now, various activities have been carried out by utilizing the existence of the Biodigester Laboratory, including:

1. Research Activities
2. Community Service Activities
3. Typical Flora Preservation at Universitas Indonesia

The utilization produces solid compost, liquid plant nutrients, and electrical energy to operate the laboratory, and the production results are also given to the community.



GreenMetric Program of FMIPA UI

FMIPA UI supports Universitas Indonesia's green campus program through the UI GreenMetric program. The environmental sustainability program, especially the FMIPA UI campus, focuses on FMIPA UI's efforts to increase awareness, and a shared understanding of the importance of campus environmental sustainability programs. So the GreenMetric Policy Direction of FMIPA UI is determined as follows:

1. Energy Conservation Program Policy at FMIPA UI
2. Transportation Policy at FMIPA UI
3. Policy on Limiting the Use of Hazardous and Toxic Materials for Food and Beverage Packaging on FMIPA UI Campus

4. Paper and Plastic Reduction Policy at FMIPA UI
5. Clean Water Conservation Policy at FMIPA UI
6. Bicycle and Pedestrian Path Usage Policy at FMIPA UI
7. No Smoking Area Policy at FMIPA UI Campus

Through this policy, FMIPA UI was ranked as the 2nd most sustainable faculty at the Universitas Indonesia in 2022.





Institute of Applied Sciences Lembaga Sains Terapan (LST) FMIPA UI



Eko Waludi, ST., M.Si.
Head of LST FMIPA UI

LST FMIPA UI was established based on the Decree of the Rector of Universitas Indonesia Number 2802/SK/R/UI/2017 dated December 29, 2017. LST FMIPA UI is a forum for research centers and studies within FMIPA UI to be able to realize its vision and mission and can collaborate with external stakeholders, such as the Government, NGOs, and industry.

LST FMIPA UI is located in the Multidisciplinary Research Laboratory building designed with the Green Building concept. This concept emphasizes environmentally friendly design, resulting in energy efficiency for lighting and air circulation. The laboratory building consists of 8 floors, each floor has a total area of about 1,000 square meters. The first floor is allocated as an auditorium and the other 7 floors as multidisciplinary research laboratories.

Vision:

To become a service institution that excels in the field of knowledge, research, and development in the field of Applied Science.

Mission:

1. Conduct and develop research in the field of Applied Science in an integrated manner with education, research, and community service activities.
2. Implementing the results of research in the field of Applied Science in the community in the context of community service
3. Carry out interactive activities with various parties in the form of consultation, training services, certification services and applied science laboratory testing services.
4. Cooperate with various parties to achieve added value.

Collaboration Strategy and Synergy LST FMIPA UI

1. Collaboration of "triple helix" between researchers of FMIPA Universitas Indonesia, Government, and Industry in the process of co-designing and co-discovery to produce research works, innovations, and superior technology.
2. Increasing the capacity of the community and all elements within FMIPA Universitas Indonesia through the implementation of consulting services, training services, laboratory tests and certifications, to services in other fields related to science, technology, and digital.
3. Creation of scientific innovations to provide strategic solutions in answering the challenges of achieving the ideals of sustainable development in the future.

The services provided by LST FMIPA UI consist of consulting, training, certification, and laboratory testing.

1. Consultancy

Consultancy services available in LST include: Consultation Services in the Field of Identification of Potential Natural Resources, Industry Risk Analysis, Surveying and Mapping, Environmental Impact Analysis, Disaster Studies, Regional Planning, Mining and Exploration Services, Regional Geothermal Studies, Financial Analysis and Statistics, Consultancy in Insurance Services, Hospital Laboratory Equipment Assessment, Chemical Analysis and Environmental Risk, and Biotechnology Analysis.

2. Training

Training services available in LST include: Welding Inspector, Geographic Information System and Remote Sensing, Strategic Environmental Assessment, Rock and Mineral Exploration Software, Diving, Actuary, Solid and Liquid Waste Management, X-Ray Medical Lab Equipment, Training Services for Science Olympiad, Regional Planning, and Basic Lab Equipment Use Training Services.



3. Certification

In collaboration with Lembaga Sertifikasi Profesi/LSP (Professional Certification Institute), LST provides certification for: Welding Inspector, Geographic Information System and Remote Sensing, Diving, Actuary, X-Ray Medical Lab Equipment, and Basic Lab Equipment Use Training Services.

4. Laboratory Test

Laboratory Testing services provided by LST includes: Chemical Laboratory Test (Biomonitoring, Microbiology, etc.), Material Laboratory Test, and Medical Physics Laboratory Test.

The Institute of Applied Science (LST) FMIPA UI has several study centers such as :

- Research Center of Geoscience (PSG)
- Research Center for Materials Science (RCMS)
- Research Center for Applied Geography (PPGT)
- Data Science Center (DSC)
- Center for Marine Studies
- Research Center for Climate Change (RCCC)
- Artificial Intelligence Center Indonesia (AICI)
- Research and Innovation Center for National Palm Industry
- Center for Medical Physics and Biophysics (CMPB)
- CoE Indigenous Biodiversity Resources and Genome.
- etc.



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