



## POSTGRADUATE PROGRAMS

Faculty of Science and Technology



## INTRODUCTION

The Faculty of Science and Technology, Universitas Airlangga is committed to play a leading role in education both at the national and international levels. As part of the academic community, we are constantly evolving towards quality improvement with global standards. Improving the performance of education, research and innovation, as well as community service is carried out with the aim of achieving greater education for world civilization. All efforts and policies in the development of science and technology can be seen from the breadth of the national and international partnership network.

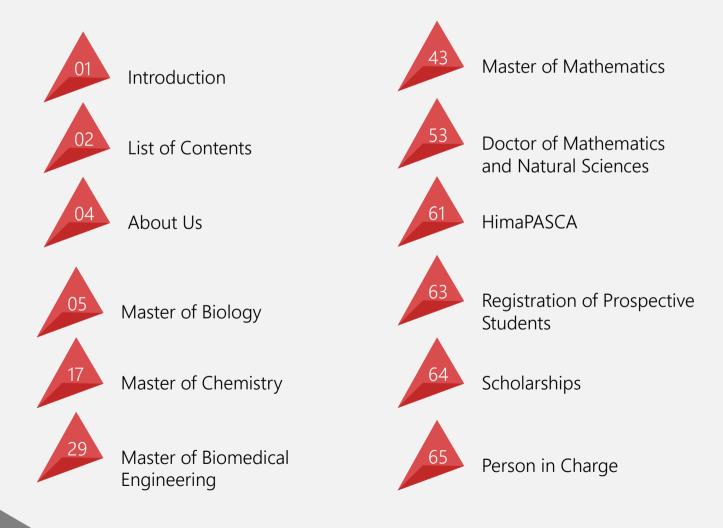
In improving the quality of postgraduate programs, we have collaborated with hundreds of institutions from various regions in the world, either in the form of student exchanges, staff exchanges, joint research, or other forms of cooperation. All aspects of enrichment including soft skills, creativity, entrepreneurship, internship experience, leadership experience that equip graduates' learning outcomes are carried out during the learning process. That is the hallmark of our postgraduate program.

We offer Masters Programs (Master of Biology, Master of Chemistry, Master of Biomedical Engineering, and Master of Mathematics) and Doctoral Program of Mathematics and Natural Sciences. We are committed to moving forward towards the latest global developments and preserving Indonesian local wisdom and values.

We hope that this booklet can provide information and benefits for all parties, especially for prospective postgraduate students of the Faculty of Science and Technology, Universitas Airlangga.

Best regards.

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# "FROM FUNDAMENTAL & APPLIED SCIENCE TO SUSTAINABLE DEVELOPMENT"

Motto of Faculty of Science and Technology



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**Master Programs** 

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**Excellent Accredited Study Programs** 

4

**ASIIN Accredited Study Programs** 

7

Accredited A Study Programs

A

University Accreditation

369

QS World University Rankings

100+

Researches per year

**37** 

**Research Groups** 

21

**Professors** 

\*as of July 2022







# BIOLOGY

www.mbiologi.fst.unair.ac.id

#### **VISION**

To be a study program that excels at the international level in the development of tropical living natural resources to improve environmental quality and health based on religious morals

# MISSIONS O1 To organize quality education so that graduates are able to solve community problems in the field of Biology in everyday life O2 To carry out research in the field of tropical living natural resources to improve environmental quality and health O3 To organize community service activities based on research results to solve problems in society O4 To prepare graduates for further education

#### **OBJECTIVES 01**

To produce graduates who are able to solve societal problems in the field of Biology in everyday life

- To produce research that supports the development of the field of tropical living natural resources to improve environmental quality and health, and is able to publish research results nationally and internationally
- To carry out community service related to the application of biology as a result of teaching and research on an ongoing basis to solve problems in society
- **04** To produce graduates who can take further education

#### **Career Profiles**

#### ACADEMICS 01

As academics, graduates of Master of Biology can work in the field of Research & Development (R&D). Graduates of Masters of Biology are expected to have a high interest in science, be able to analyze problems in the field of Biology through an inter or multidisciplinary approach, be able to evaluate problems in the field of biology and their professional practice through research to produce innovative and tested works, be able to design and conduct research in the field of biology based on the principles of the scientific method, be able to write scientific papers (journals/books/others and communicate their work orally on a national and international scale

#### RESEARCHERS 02

As researchers, graduates from Masters of Biology can become research staff in research institutions. Graduates of Masters of Biology are expected to be able to evaluate problems in the field of biology and their professional practice through research to produce innovative and tested work, able to analyze problems in the field of Biology through an inter or multidisciplinary approach, able to design and conduct research in the field of Biology based on the principles of the scientific method, and able to write scientific papers in national or international journals and communicate research results orally in national or international seminars

#### CONSULTANTS AND/OR EXPERTS 03

As consultants or experts, graduates of Masters of Biology can work in the fields of health, agriculture, non-governmental organizations, the field of biotechnology products, the field of biological natural resources such as National Parks, Nature Reserves, Ministry of Environment, Ministry of Agriculture and Forestry, and Ministry of Health. Graduates of the Masters of Biology are expected to be able to analyze problems in the field of Biology through an inter or multidisciplinary approach and be able to communicate information in the field of Biology verbally in national or international seminars

#### ENTREPRENEURS 04

As entrepreneurs, graduates of Master of Biology are able to manage a business. Graduates of Master of Biology are expected to have the ability to think creatively, imaginatively, and empower themselves for the benefit and good of their surroundings

# CURRICULUM

The Biology Master Program offers 4 areas of interest,

- ENVIRONMENTAL BIOLOGY
- MICROBIOLOGY
- ANIMAL PHYSIOLOGY
- PLANT TISSUE CULTURE



"The minimum credits that must be taken is 41-42 credits depending on the area of interest."



#### **SEMESTER 1**

#### **COMPULSORY COURSES**

Research Methodology

**Ecology and Environmental Science** 

Developmental Biology

Biostatistic

Philosophy and Bioethics

Ecotoxicology\*

Microbial Analysis Techniques\*\*

Practical Work of Microbial Analysis Techniques\*\*

Molecular Analysis Techniques#

Practical Work of Molecular Analysis Techniques#

Plant Morphogenesis##

#### **ELECTIVE COURSES**

Translational Ecology

Biology of Population

Bioremediation

**Industrial Microbiology** 

Immunology of Reproduction

Animal Reproductive Technique

Physiology of Plant Nutrients

Plant Biochemistry

#### SEMESTER 2

#### COMPULSORY COURSES

Molecular of Biology and Bioinformatics

Taxonomy and Biosystematic

Scientific Writing

Collogium §

Environmental Sampling Techniques\*

Practical Work of Environmental Sampling\*

Microbial Physiology\*\*

Adaptation Physiology#

Selected Topics of Plant Tissue Culture##

Practical Work of Selected Topics of Plant

Tissue Culture##

#### **ELECTIVE COURSES**

Coastal and Marine Ecology

**Environmental Management** 

Microbial Ecology

Medical Microbiology

Animal Cell and Tissue Culture

Comparative Endocrinology

Plant Biotechnology

**Nutrient Physiology** 

#### **SEMESTER 3**

#### **COMPULSORY COURSES**

Seminal of Thesis Proposal §

#### **SEMESTER 4**

#### **COMPULSORY COURSES**

Thesis Research Results §
Thesis and Publication §

<sup>§</sup> Open semester courses

<sup>\*</sup> Compulsory courses of Environmental Biology

<sup>\*\*</sup> Compulsory courses of Microbiology

<sup>#</sup> Compulsory courses of Animal Physiology

<sup>##</sup> Compulsory courses of Plant Tissue Culture

# Graduation Requirements

- Have passed ≥ 41-42 credits (according to areas of interest) and have passed all required courses
- GPA ≥ 3.00
- Have published the results of his thesis research in journals or proceedings with minimal status accepted
- Have an ELPT (English Language Proficiency Test) score of ≥ 475 carried out by the Language Center of Universitas Airlangga





Has been accredited A by BAN PT (2020-2025)

Graduate degree:

Master of Science (M.Si)

Period of study is 4 semesters; maximum 8 semesters. For those who excel can take 3 semesters.

Lecturers qualification : Doctoral (44%) and Professor (56%)

Laboratory Facilities: Lab. Molecular Biology; Lab. Plant Physiology; Lab. Histology; Lab. Microbiology; Lab. Ecology; and shared laboratory at the Institute of Tropical Disease (ITD) Universitas Airlangga

## Lecturers



Prof. Bambang Irawan, M.Sc.



Prof. Dr. Edy Setiti Wida Utami, M.S.



Prof. Drs. Win Darmanto, M.Si., PhD.



Prof. Dr. Ir. Agoes



Prof. Dr. Y. Sri Wulan Manuhara, M.Si.



Prof. Dr. Alfiah Hayati, M.Kes.



Prof. Dr. Sri Puji Astuti Wahyuningsih, M.Si.



Prof. Hery Purnobasuki, M. Si., Ph. D.



Dr. Salamun, M.Kes.



Dr. Hamidah, M.Kes.



Dr. Dwi Winarni, M.Si.



Dr. Nimatuzahroh



Dr. Moch. Affandi, M.Si.



Dr. Fatimah, S.Si., M.Kes



Dr. Junairiah, M.Kes.



Dr. Listijani Soehargo

# Research Groups

**Ecological Health Biology** 

Toxoecology test and development of feed supplements and aquaculture

Environmental assessment based on environmental genetics

Production of new antimicrobial compounds sourced from microorganisms

Production of biosurfactants derived from microorganisms

Potency / Toxicity Testing and Production of Standardized Herbal Medicines for Degenerative Diseases / Diabetes mellitus, Cancer and Tissue Fibrosis Wildlife Ecology Genetics

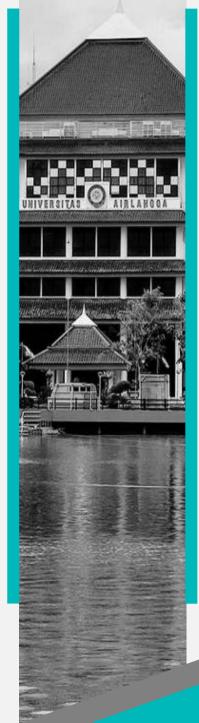
Microbiome engineering to improve the quality of food and medicinal plants

Development of microorganism-based biological fertilizers

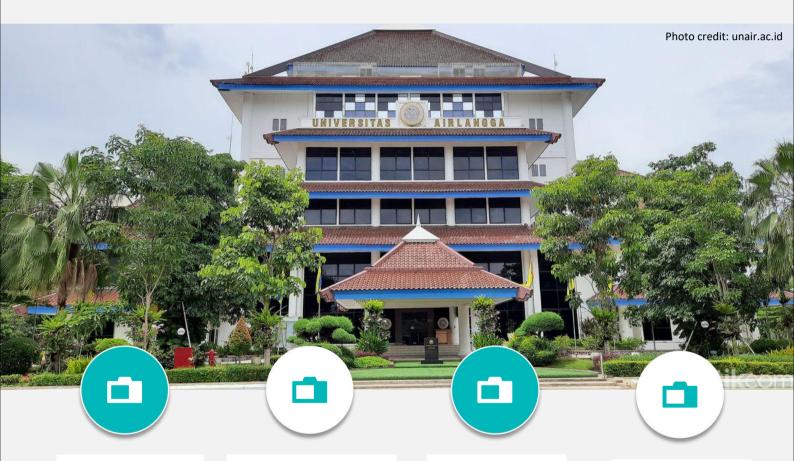
Development of microorganism-based disease vector biolarvicides

Exploration of the biodiversity of microorganisms with a metagenomic approach

Exploration and production of drug candidates from the synthesis of organic compounds and isolation of natural materials for degenerative diseases, diabetes mellitus, and cancer



# Application Requirements

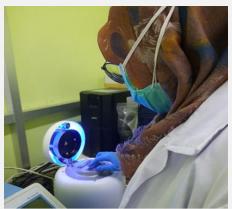


Have an undergraduate GPA > 2,75

Hold a Bachelor's Degree in Biology or equivalent Have a research proposal plan

Admission: open semester (odd and even semester)











### GALLERY









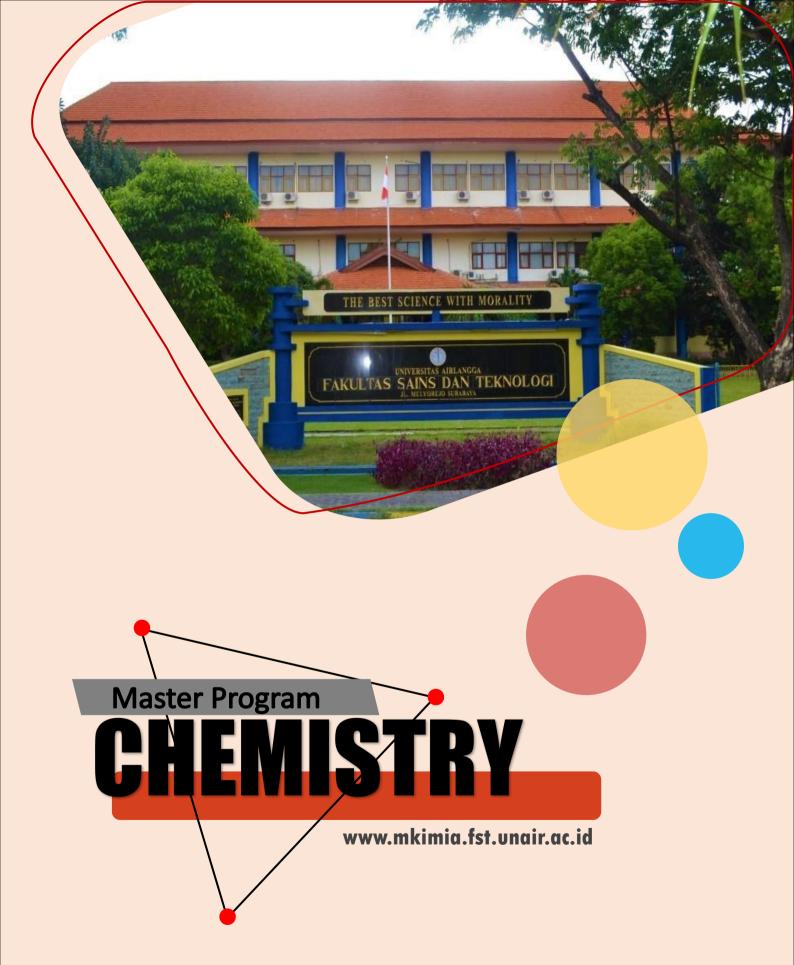


# Master Program of B I O L O G Y

#### **FACULTY OF SCIENCE AND TECHNOLOGY**

UNIVERSITAS AIRLANGGA

Campus C Jl. Dr. Ir. H. Soekarno, Mulyorejo, Surabaya 60115 Phone. (031) 5936501 Fax (031) 5936502 Official website: www.mbiologi.fst.unair.ac.id



#### VISION

To be a study program that excels at national and international levels in the fields of biosciences, synthesis, and chemical analysis according to the principles of sustainable technology through basic and applied science education and research, for the welfare of society based on religious morality

#### **MISSIONS**

- To organize quality chemistry education based on developments in science and technology, the needs of the national and international job market
- To develop innovative basic and applied science research based on scientific and technological developments
- To carry out community service as a form of embodiment of social responsibility for empowering and improving the quality of life of the community
- To carry out collaboration with government and private institutions at the national and international levels for the sustainability of program development

#### **OBJECTIVES**

- To carry out deepening or expansion of chemical or applied chemistry knowledge by producing models/methods/theory development that are accurate, tested, innovative, and can be scientifically published in nationally or internationally accredited scientific journals
- To solve science and technology problems related to chemical structure and properties at the micro and macro molecular level, through experimental approaches, theoretical deduction or computation/simulation
- To develop the benefits of chemical science so that it can be applied to a wider scope in the fields of health, industry and the environment
- To contribute to the planning and management of a research roadmap in chemistry through an inter- or multidisciplinary approach

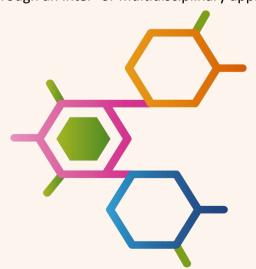


Photo Credit: Unair News

02

#### **RESEARCHERS**

Researchers who are able to contribute to planning a research roadmap in chemistry through an inter- or multidisciplinary approach



# Career Profiles

01

#### **ACADEMICS**

Academics who are able to deepen and expand chemistry or applied chemistry by producing models/methods/theory development that are accurate, tested, innovative, and can be scientifically published in nationally or internationally accredited scientific journals

03

#### **EXPERTS**

Experts who are able to solve complex chemistry problems through an inter- or multidisciplinary approach.

#### PROGRAMS OFFERED

#### Regular Program

For those who graduated from undergraduate programs in science, chemistry education, & health science

#### Fast Track Program

- Active students of the 6th semester of undergraduate program from universities with A accreditation
- Students can complete bachelor and master programs within 5 years

#### Double Degree Program

- In collaboration with Universiti Malaya (UM), Malaysia
- Students will obtain 2 diplomas (M.Si. from Universitas Airlangga and M.Sc. from Universiti Malaya



**5** Areas of Interest

Biochemistry
Organic Chemistry
Analytical Chemistry

Physical Chemistry Inorganic Chemistry

#### **Curriculum Structure**

#### Required Courses of Study Program (18 Credits) Structure and Sample Preparataion Structure and Reactivity of Research Function of Separation Method Methodology (2) (I) Inorganic Compound Biomolecules (3) (1) (3)(1)(2)(1)Structure Elucidation of Organic Compound Advance computational Chemistry (2) (II) (3)(II)Green Chemistry (3) (II) Biochemistry **Analytical Chemistry** Organic Chemistry Physical Chemistry Inorganic Chemistry Field Interest Field Interest Field Interest Field Interest Field Interest Diversity of Biotechnology Advance Synthesis and Chemistry of Secondary of Enzyme and Material and Modification of Instrumentation metabolite Microorganism **Smart Surface** Inorganic Materials al Analysis (3) (I) Compound (2) (2)(1)Chemistry (3) (I) (3)(1)(1) Genetic Kinetic of Analysis of Characterization of Engineering Adsorption and Validation Heterocyclic Inorganic Microorganism Desorption (3) Method (2) (I) Chemistry (2) (I) Compound (2) (II) (2)(1)(III) Chemical analysis of Food Metabolism (2) Applied Inorganic Bioassay (2) (II) and (II) Chemistry (2) (II) Contaminant (2)(II)Design and Genomic and method of Chemo-and Proteomic BioSensor (2) Organic Analysis (2) (II) (11) Synthesis (2) (II) 27 sks • 26 sks 24 sks 26 sks 25 sks Elective Courses (11 + 38 Credits) Consist of any courses from others field interest and special elective courses **Forensic Chemical** Quantum Chemistry and Applied Computational Nanochemistry **Analysis** Thermodynamically Chemistry (3) (I) (2)(1)Statistic (2) (II) (2)(1)All of core courses on the other field interested Independent study Chemo- and (2) (III or IV) **Biosensor Practice** (38)(I, II, III, IV)(2)(II)Proposal Thesis (2) (II/ III) Blue color means the number of credits Red color means semester suggest to be taken (I for odd semester, II for even semester, III for third semester, and IV Result Seminar (2) (II/ III)

Thesis (6) (III/ IV)



### Study Program Excellence

Has been accredited A by BAN PT (2018-2023)

Lecturers qualification:
Doctoral (64%) and Professor (66%)

Graduate degree: Master of Science (M.Si)

Period of study is 4 semesters; maximum 8 semesters. For those who excel can take 3 semesters. Laboratory Facilities: Lab.
Analytical Chemistry, Lab.
Organic Chemistry, Lab.
Biochemistry, Lab. Physical
Chemistry, Lab. Inorganic
Chemistry, Lab. Bio-Molecular
Engineering (BIOME), Lab.
Computing Chemistry, and
shared laboratory at the Institute
of Tropical Disease (ITD)
Universitas Airlangga

**02** 

03

#### Lecturers

#### **BIOCHEMISTRY**



Prof. Dr. Ni Nyoman Tri Puspaningsih, M.Si. ni-nyoman-t-p@fst.unair.ac.id

Proteomic and genomic analysis of



Prof. Dr. Afaf Baktir, Dra., M.S.

afaf-b@fst.unair.ac.id

Enzymatic-based biosensor; Exploration of enzyme for health and industry



Dr. Sri Sumarsih, M.Si. sri-s@fst.unair.ac.id

Enzymes for organic waste treatment

lignocellulosic enzymes



Prof. Dr. Purkan, S.Si., M.Si.

purkan@fst.unair.ac.id

DNA recombinant on tropical disease; Modified biotechnology product



Ali Rohman, S.Si., M.Si. Ph.D.

alirohman@fst.unair.ac.id

Bioinformatic

#### **ORGANIC CHEMISTRY**



Prof. Tjitjik Srie Tjahjandarie, Dra., Ph.D. tjitjiktjahjandarie@fst.unair.ac.id

Organic synthesis



Prof. Dr. Pratiwi Pudjiastutie, M.Si. pratiwi-p@fst.unair.ac.id

Alkaloid isolation from Erihrina and Stemona genus



Dr. Alfinda Novi Kristanti, DEA.

alfinda-n-k@fst.unair.ac.id

Natural product and secondary metabolic



Prof. Dr. Nanik Siti Aminah, M.Si.

nanik-s-a@fst.unair.ac.id

Antioxidant activity of phenolic compounds



Dr. Hery Suwito, M.Si. hery-s@fst.unair.ac.id

Design and synthesis of bioactive compounds



Prof. Dr. Mulyadi Tanjung, M.Si.

mulyadi-t@fst.unair.ac.id

Natural products chemistry



Rico Ramadhan, S.Si., M.P., Ph.D.

rico.ramadhan@fst.unair.ac.id

Natural products chemistry

#### Lecturers

#### **INORGANIC CHEMISTRY**



Prof. Dr. Hartati, Dra., M.Si.

hartati@fst.unair.ac.id

Synthesis of solid state catalysts for organic synthesis



Dr. Alfa Akustia Widati, S.Si, M.Si.

alfa-a-w@fst.unair.ac.id

Inorganic surface chemistry



Satya Candra Wibawa Sakti, S.Si., M.Sc., Ph.D. satya.sakti@fst.unair.ac.id

Advanced materials for water treatments

#### ANALYTICAL CHEMISTRY



Dr. Muji Harsini, M.Si. muji\_harsini@yahoo.co.id

Chemo- and bio-sensors; electrochemical degradation of textile waste



Dr. rer. nat. Ganden Supriyanto, Dipl. EST., M.Sc. ganden88@yahoo.com

Photometrical biosensor; bioremediation; and waste treatment



Dr. Miratul Khasanah, M.Si. miratulkhasanah@gmail.com

Chemo-sensor and electroanalysis



Yanuardi Raharjo, S.Si., M.Sc., Ph.D.

yanuardiraharjo@fst.unair.ac.id

Sample preparation, microextraction, and membrane technology

#### PHYSICAL CHEMISTRY



Drs. Imam Siswanto, M.Si. imamsiswanto@fst.unair.ac.id

**Computational Chemistry** 



Dr. Handoko
Darmokoesoemo, DEA.
handoko-d@fst.unair.ac.id

Absorbent materials



Mochamad Zakki Fahmi, S.Si, M.Si., Ph.D.

m.zakki.fahmi@fst.unair.ac.id

Medical-purposed nanomaterial, polymer and fly ash-based geopolymer

# Research Group

- Nanoparticles and drug delivery
  - Membrane Science & Technology Research Group
    - Inorganic Materials
- Development Method of Analysis
- Supra Modification and Nano Micro-Engineering
- Environmental Technology
- Polymicrobial Biofilms and Antibiotic Resistance
  - Center for testing the potency and toxicity of natural ingredients for food and standardized medicines



- Research Centre for Bio-Molecules Engineering
- Separation Science and Technology Towards Green Chemistry
- Indonesian Medicinal Plant Biotechnology
- Natural Materials Organic Chemistry
- Chemosensor and Biosensor
- Exploration and synthesis of bioactive compounds
- Research Group of
  Biochemical Engineering(BIOME): Enzyme Technology,
  Genomic and Proteomic
  Analysis, Bioinformatics,
  Bioprocess Technology,
  Polymicrobial Biofilm,
  Applied microbiology and
  bioresource technology)

# Application Requirements



Have an undergraduate GPA > 2,75

Hold a Bachelor's Degree in Chemistry, Chemistry education, and health science

Have a research proposal plan

Admission: open semester (odd and even semester)















#### Disinfektan Anolyte Aman bagi Kesehatan

#### Klinis Seratus Kali Lebih Efektif daripada Pemutih

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SURABAYA, Janea Per Tenggunaan
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dian gagap mensiliki risiko bagi kesehatan maransak. Sameni kan paka Univerbatan maransak. Sameni kan paka Unituri dalam di kandari kandari dalam di kandari dalam di kandari dalam di kandari kan



me, tous bakeritmaupus virus Larutan antiseptik ion garam yang dielektro-lisis dapat membunuh bakeri dan sihidung serta tenggorokan bagi penggona selama inahasi (menghdup udara ke paru-paru). Tanpa mengaki-bakan kesulitan bernapas, tanpa iri-tasi pada kulit," katanya.

Sniji memitukan, selama in ma-syarakat modah memenakan disinfek-tan di pasaran. Mulai minyak pinus, fenol, EEO2, NaOCL, dan etanola. Namun, bahan-bahan tersebut memiliki efek samping bagi tubuh dan ke-sebatan. "Iadi, kami menggunakan bahan asiluyise sebagai bahan caliran.

# KEUNGGULAN DISINFEKTAN HASIL ELEKTROLISIS LARUTAN GARAM

disinfektan yang aman dan ramah

disinfektan yang aman dan ramah lingkangan, 'nuturnya.
 Dia menjelaskan, anohya dalah han dekandakan, anohya mangang (NaCl). Fungsinya sebagai cairan disinfektan yang bias membershikan dan me-miliki beuturugan dibanding seryawa Morri halmya, Jupa, diak memiliki elek samping bagi mansah anupum hewam. 'Aoolyir ini tidak beracun dan dapat teruri dengan sendirnya tanpah arus mencenankan tingku-tanpah arus mencenankan tingku-

ngan," Jelasnya.

Menurut Muji, disinfekari aropite terbuki sesan klain 190 kali lebih
efektif dihanding pembersihan dengan
pemath Juga, dapat membanah bib
banyak sekitar 99 peren bakeri, viros,
kuman, dan pembewa penyaki terbuhaya laimya. "Anohe ligas sering diganakan dalam pengelahan air immu, peternakan ayam, bidi daya udang,
pengelahan airahakan, limbah, sasitusi
numah sakit dan laira-lain."

Dalam peneregamnya di rumah saki, hajiyi da, an opiye diganakan untuk mescuci tangur, dekentaninad penyim-panan air dan pipa kerja, hingga men-cuci dan merendam kaki. Aoolyi-joga bisa diganakan untuk membersh-kan permukana ksara dan dekontunan-nasi pedengkapan al/maound. 'Bisa-juga untuk mencuci kasur dan kuri roda. Masih banyak lagi,' katanya. Maji mengatakan, anolyie sendiri dibuat melalui akirisasi elektrokimia (electre-hemolad risulator E-E-L). Cam

80 liter setiap jamnya," papar (ayu/c15/dio)

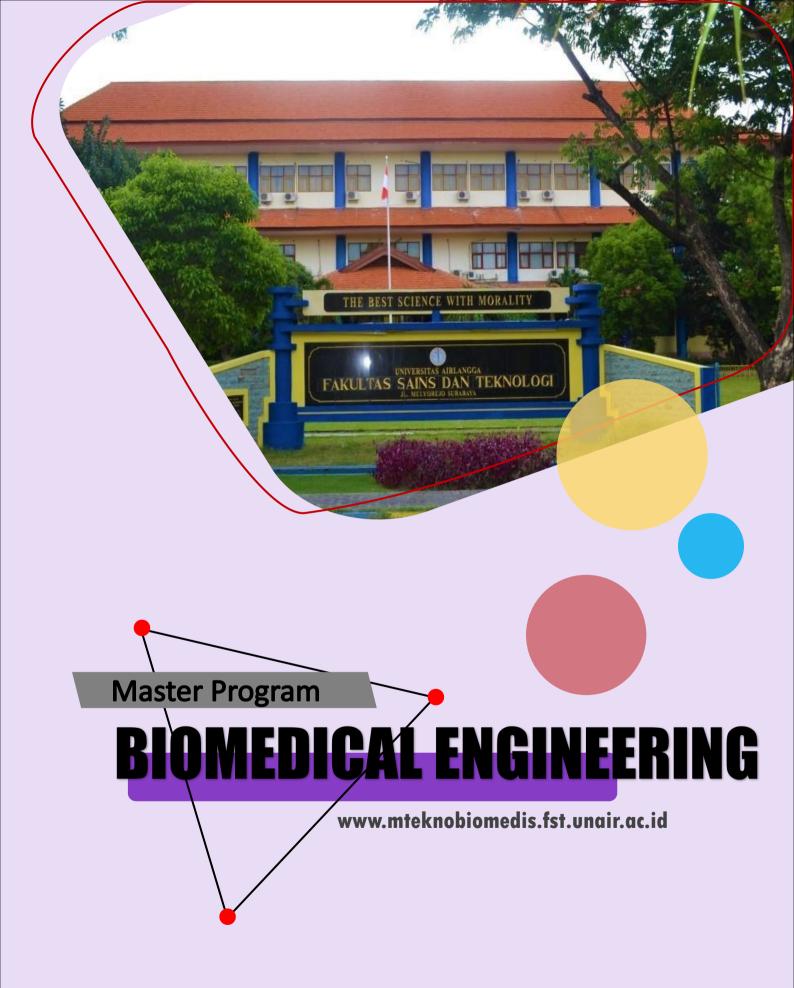


# Master Program of C H E M I S T R Y

#### **FACULTY OF SCIENCE AND TECHNOLOGY**

UNIVERSITAS AIRLANGGA

Campus C Jl. Dr. Ir. H. Soekarno, Mulyorejo, Surabaya 60115 Phone (031) 5936501 Fax (031) 5936502 Official website: www.mkimia.fst.unair.ac.id



#### **VISION**

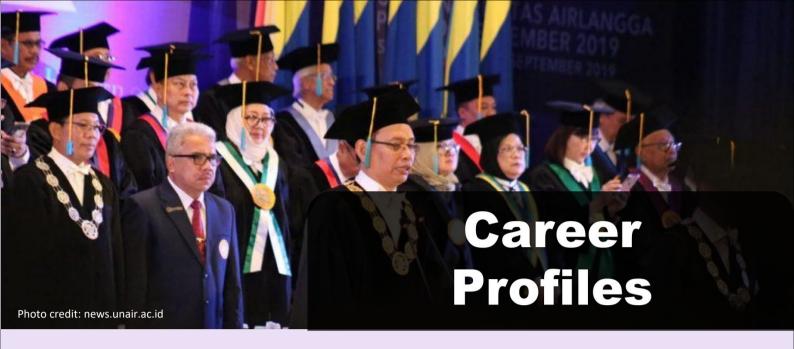
To be a center of excellence in education and research in the field of Biomedical Engineering at national and international levels based on civilized ethics and morals to support the development of the field health and medical industry

#### **MISSIONS**

- To organize education, research and its development that is beneficial to society and knowledge in the field of Biomedical Engineering at the national and international levels
- To produce qualified graduates in the field of biomedical engineering who are oriented towards mastery of designs, devices, systems and materials in the health and medical industry
- To develope knowledge, research and community service in the field of biomedical engineering through research to produce innovative and tested works
- To assist in solving science and technology problems in the field of biomedical engineering through an inter or multidisciplinary approach

#### **OBJECTIVES**

- To produce graduates who are able to solve biomedical technology problems by designing medical instrumentation system engineering and biomedical signal processing systems through a multidisciplinary approach
- **02**
- To produce graduates who are able to develop knowledge and technology in the scientific field or professional practice of biomedical engineering through innovative and tested research
- 03
- To produce graduates who are able to design and manage research and development for the benefit of society and science in the field of biomedical engineering and gain national and international recognition.
- 04
- To produce graduates who are able to design biomaterial engineering to produce artificial tissues and organs
- 05
- To produce graduates who are able to formulate safety and security in accordance with medical equipment standards and regulations based on the spirit of excellence with morality
- 06
- To produce graduates who are able to design operations planning and management in the health and medical industry



#### **ACADEMICS**

Graduates are able to solve biomedical technology problems by carrying out engineering designs through a multidisciplinary approach. Moreover, graduates are able to improve the quality, quantity and significance of research and community service through strengthening professional and independent mastery of science and technology in the field of Biomedical Engineering



### PROFESSIONALS

Graduates are able to design medical instrumentation system engineering, biomedical signal processing systems, and biomaterial engineering to produce artificial tissues and organs.

#### RESEARCHERS

Graduates are able to design and manage research and its development that benefit society and knowledge in the field of biomedical engineering and gain national and international recognition. Moreover, graduates are able to develop knowledge and technology in the scientific field or professional practice of biomedical engineering through innovative and tested research.





### MANAGERS

Graduates are able to formulate safety and security in accordance with medical equipment standards and regulations based on the spirit of excellence with morality. In addition, graduates are also able to design operations planning and management in the health and medical industry.

### **Programs Offered**



#### REGULAR PROGRAM

The regular program can be attended by students from undergraduate programs in Dentistry, Veterinary Medicine, Medicine, Pharmacy, Nursing, Public Health, Mechanical Engineering, Industrial Engineering, Mathematics, Biology, Chemistry, Physics, Radiology, Nursing, Traditional Medicine, Engineering Physics, Biomedical Engineering, and Electrical Engineering.

#### **DOUBLE DEGREE PROGRAM**

The Double Degree Program is held in collaboration with the Department of Bioinformatics and Medical Engineering, Asia University, Taiwan with an implementation scheme: the first 1 year at Airlangga University and the following 1 year at Asia University. The degree earned after completing this program is M.T. and M.Sc.



# Photo credit: unair.ac.id

#### FAST TRACK PROGRAM

The Fast Track program allows students to complete Bachelor and Master Programs within 5 years. Program participants take semesters 1 & 2 of the Masters program together with semesters 7 & 8 of the Bachelors program.

#### **CURRICULUM**

The curriculum of the Biomedical Engineering Masters Program is designed in a balanced way to provide theoretical and practical abilities that are adapted to the latest developments in science and technology and the development of clinical medical technology applications.

Curriculum redesign is carried out no later than once every 5 years by taking into account input from alumni and stakeholders.

The study program curriculum is designed as an open semester which allows students to graduate within 3 semesters.



2 Areas of Interest

**Biomaterials Medical Instrumentation** 

"The minimum number of credits that must be taken by students is 40 credits"

### **List of Courses**

#### SEMESTER 1

#### **COMPULSORY COURSES**

Biomedical Technology and Clinical Aplications
Applied Mathemathics & Biostatistics
Biophysical System
Sustainable Therapy Management
Applied Physiology
ELECTIVE COURSES (min. 4 credits)

#### **SEMESTER 2**

#### **COMPULSORY COURSES**

Research Metodology
Biomedical Instrumentation Engineering
Biomedical Signal Processing
Biomaterials Engineering
Nanomaterial & Nanotechnology
ELECTIVE COURSES (min. 4 credits)

#### **SEMESTER 3**

**COMPULSORY COURSES** 

Res<mark>ear</mark>ch Proposal

# SEMESTER 4 COMPULSORY COURSES Thesis

#### **Elective Courses of Biomaterial**

Medical Material Proccessing Artificial Organ Technology Delivery System in Drug Therapy Capita Selecta of Biomaterials

#### **Elective Courses of Medical Instrumentation**

Biomedical Image Engineering
Optimization Technique
Artificial Intelligent
Capita Selecta of Medical Instrumentation

#### **General Elective Courses**

Standards & Regulations of Medical Devices & Materials Industrial Planning Biomedical Fotonics



#### **Lecturers**

All lecturers have doctoral degrees and 40% of them are Professors



#### **Areas of Interest**

Has 2 areas of interest that support each other

#### Internationalization

Through double degree programs, outbound and inbound staff/students, as well as acceptance of foreign students

#### **Collaborations**

Collaborations in teaching, research, publication, and product downstreaming with domestic and foreign institutions and industries

# **LECTURERS**



Prof. Dr. Suhariningsih
Biophysics, Medical Physics
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Prof. Dr. Retna Apsari, M.Si.
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retna-a@fst.unair.ac.id



**Prof. Dr. Moh. Yasin., M.Si.**Photonics
yasin@fst.unair.ac.id



Prof. Dr. Suryani Dyah Astuti, M.Si Biophysics, Medical Physics suryanidyah@fst.unair.ac.id



**Dr. Aminatun, M.Si.**Biomaterials
aminatun@fst.unair.ac.id



**Dr. Khusnul Ain, M.Si**Medical Instrumentation
k\_ain@fst.unair.ac.id



**Dr. Riries Rulaningtyas, M.T.**Medical Instrumentation
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Dr. Soegianto Soelistiono, M.Si.
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**Dr. Nuril Ukhrowiyah, M.Si.**Medical Instrumentation
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**Dr. Imam Sapuan M.Si.**Medical Instrumentation
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**Herri Trilaksana, M.Si., Ph.D.**Photonics
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Dr. Prihartini Widiyanti, drg., M.Kes Biomaterials pwidiyanti@fst.unair.ac.id



Ersyzario Edo Yunata, M.Si., Ph.D. Biomaterials ersyzario.edo@fst.unair.ac.id



Andi Hamim Zaidan, M.Si., Ph.D.
Nanomaterials
zaidan@fst.unair.ac.id



M. Zakki Fahmi, M.Si., Ph.D.
Nanomaterials
m.zakki.fahmi@fst.unair.ac.id



**Dr. Rimuljo Hendradi, M.Si.**Biomedical Signal Processing rimuljo-h@fst.unair.ac.id



Dr. Hari Basuki Notobroto, dr., M.Kes Public Health haribasuki.n@fkm.unair.ac.id



Prof. Dr. Bambang Purwanto, dr., M.Kes. Medicine bambang-purwanto@fk.un<u>air.ac.id</u>



**Dr. Wisudanto, SE.,MM.CFP.**Economic, Management
wisudanto@feb.unair.ac.id



Prof. Dr. med. Puruhito, dr., Sp.B-BTKV(K) Cardiothoracic Surgery



Prof. Dr. Dwikora Novembri Utomo, dr., SpOT(K) Orthopedics & Traumatology dwikora-novembri-u@fk.unair.ac.id



Prof. Junaidi Khotib, Apt., M.Kes., Ph.D Pharmacy junaidi-k@ff.unair.ac.id



**Prof. Dr. Budi Suprapti, M.Si.**Pharmacy
budi-s@ff.unair.ac.id



Dr. Yulistiani, Apt., M.Si.
Pharmacy
yulistiani@ff.unair.ac.id

# RESEARCH GROUPS



### **Biophysics and Medical Physics Research Group**

#### **Photodynamic Therapy (PDT)**

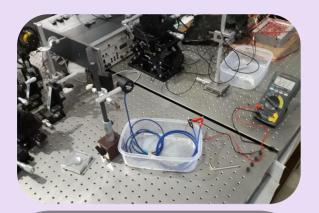
- Physical aspect of PDT,
- Photosensitizer in PDT; organic, metal and drug
- Antimicrobial PDT
- PDT for cancer
- In vitro, in vivo research
- Clinical trial
- aPDT equipment
- Intellectual Properties: 12 patens, 2 merks, 2 hooks
- Collaboration: Dentistry, Vocational Veterinary, PDGI, Public Health

#### Plasma discharge technology (Ozonized)

- Ozone formation process
- Physical and chemistry aspect
- Decontaminant of herbal medicinal ingredients
- Ozone for antimicrobial therapy
- Ozone equipment
- Collaboration: Pharmacy, Biology, UNDIP

#### **Gas Array Sensors (Electronic Nose)**

- Gas array sensors
- Physical and chemistry aspect
- computation aspect E-nose,
- Quality of food
- early detection of oral and dental diseases
- E-nose equipment
- Collaboration: Dentistry, UGM, Instrumentation, computational



### Biophotonic Research Center (BRC)

#### **Target Product**

- Microfiber Machine
- ASE (Amplified Spontaneus Emission
- COMPACT OPTICAL EQUIPMENT (FUTURE PLAN)

#### Collaboration

- PRC, University of Malaya
- Photonic Eng. Lab., University of Malaya
- Laser Centre, UTM
- AIPT, Aston University, UK
- ORC, Univ. of Southampton
- CGCRC, Kolkata, India
- Niciss Lab. & Photoelectron Lab., Flinders University
- P2F LIPI

#### "Until 2020, more than 170 papers have been published (ISI / Scopus Index)"



### RESEARCH GROUPS





### Biomaterial Research Group

#### **Hard Tissue Biomaterial**

- Metal implant coating
- Hydroxyapatite composite as bone scaffold
- Hydroxyapatite-polymer composite nano-fiber
- as bone scaffold
- 3D printing scaffold for the mandible
- Materials injectable for bone healing

#### **Soft Tissue Biomaterial**

- PCL-PLA-HA composite nano-fiber as ligament scaffold
- Polymer as wound dressing and wound healing

#### Collaboration

- UGM
- ITE
- IPB
- BATAN
- RSUD Dr. Soetomo

### Biomedical Signal & System Research Group

#### **Collaborators**

- Dr. Rifai Chai (Faculty of Science, Engineering & Technology, School of Software and Electrical Engineering, Department of Telecommunications, Electrical, Robotics and Biomedical Engineering, Swinburne University of Technology, Victoria, Australia).
- Dr. I Putu Alit Pawana, Sp. KFR. (Instalation of Medical Rehabilitation, Department of Physical Medicine and Rehabilitation, RSUD Dr Soetomo, Surabaya, Indonesia).
- Dr. Eng M. Abu Jamiin, S.T, M.T (Automation Engineering, Shipbuilding Institute of Polytechnic Surabaya).
- Assoc. Prof. Dr. Ardiyansyah Syahrom, M.Eng (Medical Devices and Technology Centre (MEDITEC), Faculty of Biomedical Engineering, Universiti Teknologi Malaysia (UTM), Johor Bahru, Malaysia).
- Dr. dr. Jan Halbertsma (Department of Rehabilitation Medicine, University Medical Center Groningen, Groningen, The Netherlands)





Have an undergraduate GPA > 2,75 and TOEFL > 450



Have Bachelor's Degree in Dentistry, Veterinary Medicine, Medicine, Pharmacy, Nursing, Public Health, Mechanical Engineering, Industrial Engineering, Mathematics, Biology, Chemistry, Physics, Radiology, Nursing, Traditional Medicine, Engineering Physics, Biomedical Engineering, and Electrical Engineering.

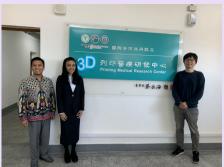


Have a pre-proposal plan including: Title, Introduction (background, problem formulation, research objectives and benefits), Literature review, Hypothesis, Research materials and methods, Bibliography.



Students who are not graduates from Physics/Physical Engineering, Biomedical Engineering, Electrical Engineering undergraduate programs are required to attend matriculation courses













# GALLERY





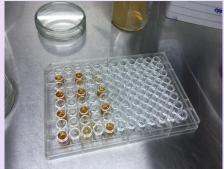




















### GALLERY





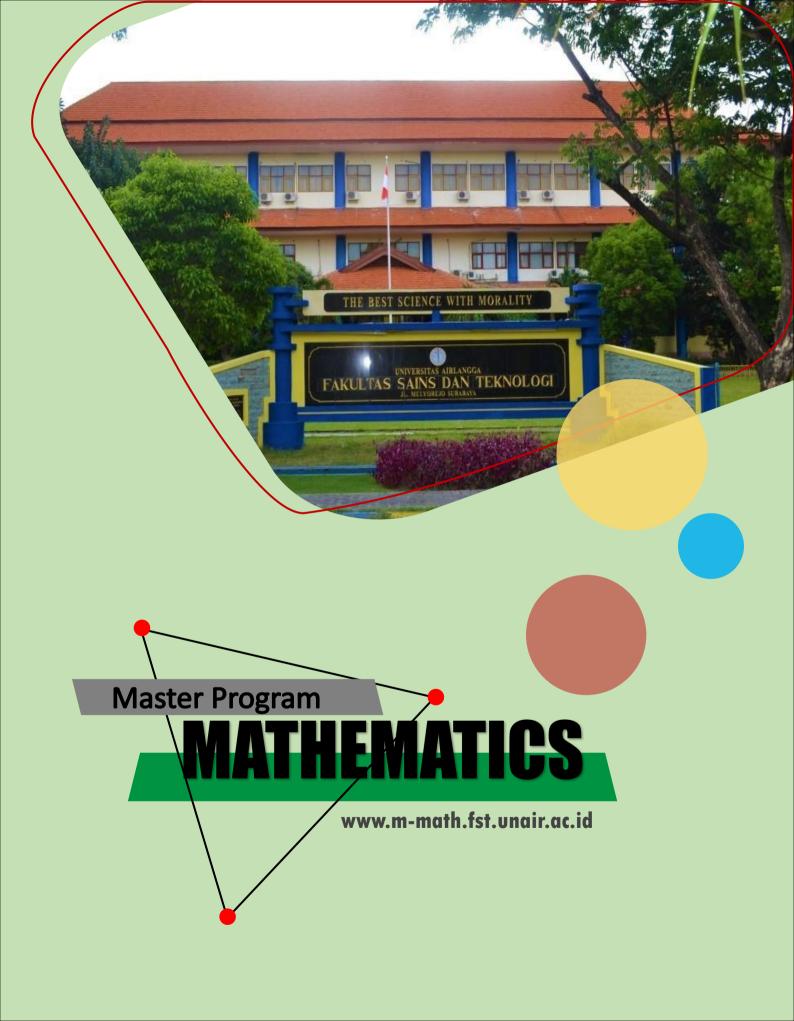


# Master Program of BIOMEDICAL ENGINEERING

#### **FACULTY OF SCIENCE AND TECHNOLOGY**

UNIVERSITAS AIRLANGGA

Campus C Jl. Dr. Ir. H. Soekarno, Mulyorejo, Surabaya 60115 Phone (031) 5936501 Fax (031) 5936502 Official website: www.mteknobiomedis.fst.unair.ac.id



#### **VISION**

To be a center for the development of Mathematics and its application in the field of life sciences based on religious morality

#### **MISSIONS**

- To organize effective and efficient education based on the applicable curriculum to produce innovative and professional graduates
- To conduct innovative, productive and quality research, both independently and collaboratively at national and international levels to support the development of mathematics, statistics and computing, especially in the field of life sciences
- To do community service as an actualization of quality and dignified application of mathematics, statistics and computing
- To produce graduates who have noble character, are competent in their fields, qualified and able to adapt to changes and developments in science and technology

#### **OBJECTIVES**

- To produce graduates who are able to master the concepts and mindset of Mathematics and are able to apply them in the learning process
- To produce graduates who are able to develop mathematical concepts through research in the field of mathematics
- To roduce graduates who are able to identify problems that arise in the industrial, health, economic and social fields and solve them using mathematical modeling
- To produce graduates who have high self-confidence and are able to work together professionally and are able to compete at national and international levels



#### **ACADEMICS**

Graduates are able to communicate in a straightforward, easy, and precise manner in mastering mathematical concepts and their application.







#### **RESEARCHERS**

Graduates are able to solve complex mathematical problems through an inter/multidisciplinary approach, both at the national and international levels

#### **PRACTITIONERS AND CONSULTANTS**

Graduates are able to contribute to solving problems faced by society and institutions





### **CURRICULUM**

The curriculum structure of the Mathematics Masters Study Program is based on the KKNI and has different characteristics from the same study programs in other institutions.

The curriculum is designed for a period of 4 (four) semesters and can be completed in less than 4 (four) semesters and a maximum of 8 (eight) semesters including the preparation of a thesis.

The program offers 5 areas of interest and 2 types of course.



2 types

**Master by Coursework Master by Research** 

5 areas of interest

Analysis and Geometry
Algebra and Combinatorics
Modeling and Simulation
Operations Research and Computing
Statistics

#### **Master by Coursework**

#### SEMESTER 1

COMPULSORY COURSES

Research Methodology Matrix Analysis Probability Theory ELECTIVE COURSES

(4-7 credits)

SEMESTER 3

COMPULSORY COURSES

Thesis Proposal\*

ELECTIVE COURSES (10-13 credits)

# SEMESTER 2 COMPULSORY COURSES

Real Analysis
Computational Mathematics
ELECTIVE COURSES ( 6-9 credits)

SEMESTER 4

COMPULSORY COURSES

Thesis\*
ELECTIVE COURSES

(6-9 credits)

#### **ELECTIVE COURSES SEMESTER 1 & 3**

Functional Analysis\*
Graph Theory and Combinatorics\*\*
Optimum Control Theory\*
Biomathematical Modeling\*
Fractional Modeling\*
Heuristic Method\*\*
Biomedical Informatics\*\*
Social Economic Statistical Modeling §
Data Smoothing Techniques §

Open Semester Courses

Multivariate Analysis §

- \* Elective Courses of Analysis and Geometry
- \*\* Elective Courses of Algebra and Combinatorics

#### **ELECTIVE COURSES SEMESTER 2 & 4**

Capita Selecta Analysis and Geometry\*
Capita Selecta Algebra and Combinatorics\*\*
Abstract Algebra\*\*
Dynamic System#
Capita Selecta Modeling and Simulation#
Big Data Analysis##
Optimization Theory##
Capita Selecta Operations Research and Computing ##
Capita Selecta Statistics §
Modeling of Life Statistics §
Geospatial Data Analysis §

- # Elective Courses of Modeling and Simulation
- ## Elective Courses of Operations Research and Computing
- § Elective Courses of Statistics

#### SEMESTER 1

**COMPULSORY COURSES** 

Research Methodology Independent Study Article Reviews

**ELECTIVE COURSES** 

(2-6 credits)

# SEMESTER 3 COMPULSORY COURSES

Thesis Proposal\*
Scientific Publications 2\*

**ELECTIVE COURSES** (4-8 credits)

#### SEMESTER 2

COMPULSORY COURSES

Scientific Seminars
Research Results Exam
Scientific Publications 1\*

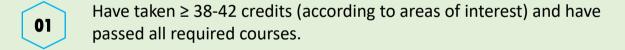
**ELECTIVE COURSES** (2 credits)

# SEMESTER 4 COMPULSORY COURSES Thesis\*

**ELECTIVE COURSES** 

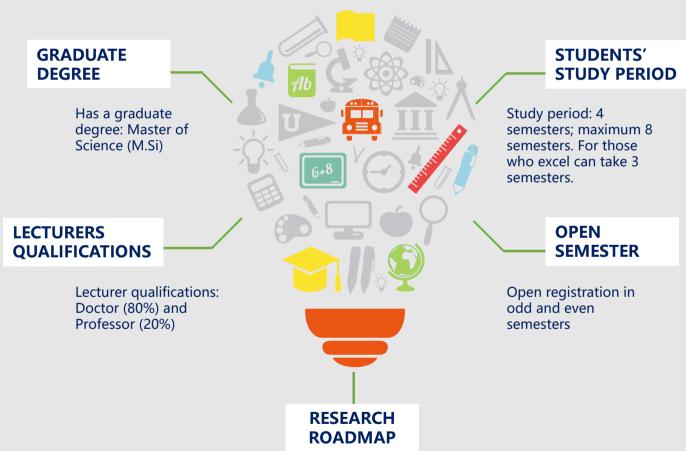
(6-10 credits)





- **02** GPA ≥ 3.00
- Have published the results of his thesis research in journals or proceedings with *accepted* status
- Have an ELPT (English Language Proficiency Test) score of ≥ 475 carried out by the Language Center of Universitas Airlangga





Has a research roadmap that is integrated with the Mathematics Department which consists of 8 Research Groups: Analysis, Algebra, Programming and Computing, System Modeling, Life Science Statistical Modeling, Social and Economic Statistical Modeling, Business Intelligence, and Information Systems Engineering Research Groups

### **LECTURERS**



**Prof. Dr. Fatmawati, M.Si.**Mathematical Modeling, Optimum Control, Applied Algebra





**Dr. Eridani, M.Si.**Mathematical Analysis

Herry Suprajitno, M.Si., Ph.D. Optimization, Operation Research, Arithmetic Material





**Cicik Alfiniyah, M.Si., Ph.D.**Biological Mathemathics

**Dr. Windarto, M.Si.** Fluid Dynamics Modeling, Numerical Computing





**Dr. Yayuk Wahyuni, M.Si.** Graph Theory

Dr. Inna Kuswandari, M.Si. Graph Algebra





**Dr. Liliek Susilowati, M.Si.** Algebra/Graph Theory

Dr. Nenik Estuningsih, M.Si. Applied Algebra





**Dr. Nur Chamidah, M.Si.**Statistical Modeling in Health Sciences,
Nonparametric and Semiparametric Regression,
Data Mining/Text Mining Analysis

**Dr. Ardi Kurniawan, M.Si.** Life Time Data Analysis, Structural Equation Modelling, Marketing Data Analysis





**Dr. Toha Saifudin, M.Si.**Spatial data Analysis, Computational Statistics

Dr. M. Fariz Fadillah Mardianto, M.Si.
Statistics Modeling for Economics and Social
Sciences, Nonparametric Time Series,
Longitudinal Data Analysis



Ira Puspitasari, M.T., Ph.D.
Information Systems Engineering, Data Analytics,
Consumer Health Informatics

**Dr. Rimuljo Hendradi, M.Si.**Biomedical Signal Processing, Business Intelligence, Decision Suport Systems



**Dr. Eva Hariyanti, M.T.** Risk Management, IT Governance



# Research Group

#### **MATHEMATICAL MODELING**

Estimation of the spread of infectious diseases using a mathematical model approach

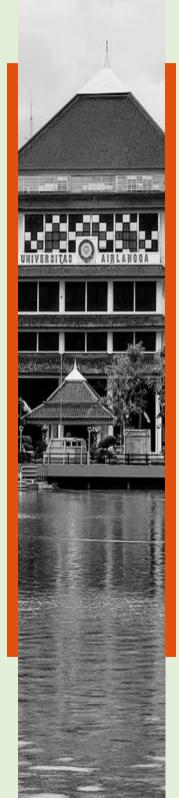
### STATISTICAL MODELING IN LIFE SCIENCE

Children Growth Chart for Assesing Nutritional Status, Infectious and non-Infectious diseases modelling with a statistical model approach, Detection of disease based on image with a statistical model approach

### INFORMATION SYSTEM ENGINEERING

Building an information technology governance framework for health.

Development of a computer-assisted diagnosis system for lung disease using the hybrid deep learning method



#### ANALYSIS & ALGEBRA

Operator theory and Matrices dimension

#### COMPUTATIONAL SCIENCES

Artificial Intelligence (disease diagnosis and application development), Optimization (scheduling and assigning of health workers)

# STATISTICAL MODELING IN SOCIAL & ECONOMICS SCIENCE

**Queue Modelling** 

#### **BUSINESS INTELLIGENT**

Development of electronic diagnostic systems in health based on cellular technology





Have an undergraduate GPA > 2,75



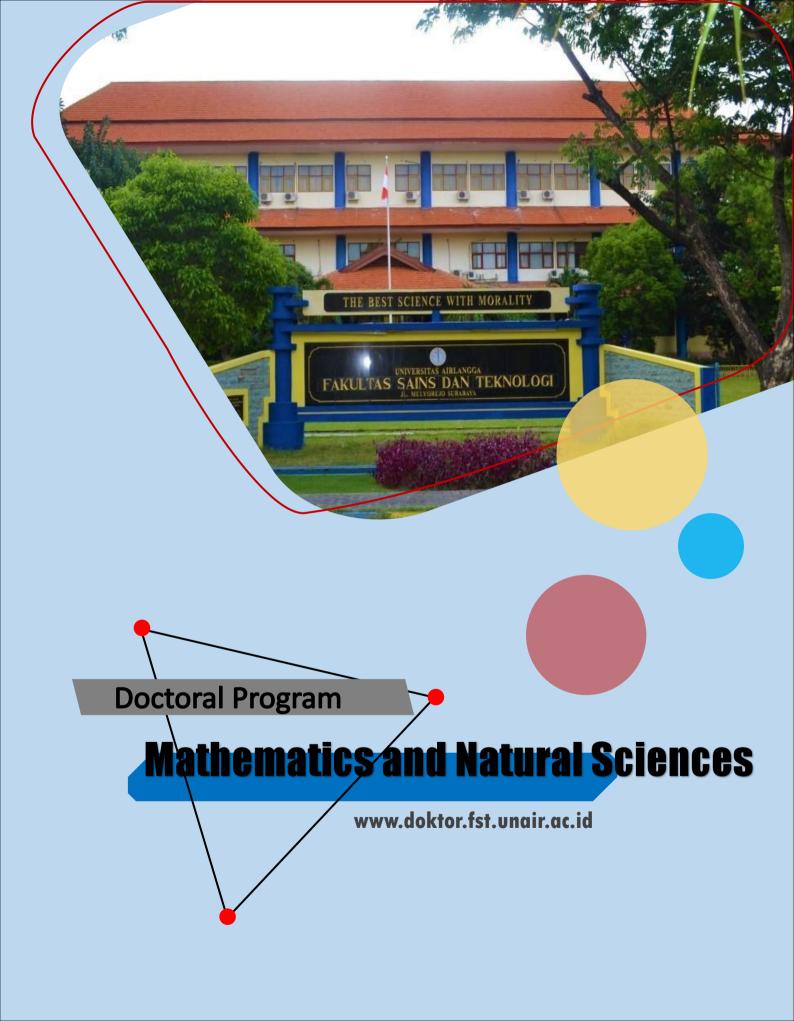
Have Bachelor's Degree in Mathematics, Mathematics Education, Statistics, Data Science, Actuarial Science, Computers, Computer Science Education and other allied fields



Have a pre-proposal plan including: Title, Introduction (background, problem formulation, research objectives and benefits), Literature review, Hypothesis, Research materials and methods, Bibliography.



Admission: open semester (odd and even semester)



#### **VISION**

To be a doctoral study program that is independent, innovative, leading at the national and international levels, and being a pioneer in the development of mathematics and natural sciences based on religious morality

#### **MISSIONS**

- To organize academic education programs in mathematics and natural sciences and educating students to become a scientist
- To develop research in the field of mathematics and natural sciences professionally through scientific findings
- To carry out community service as a form of social responsibility by involving students
- To do collaborations with various institutions at the national and international levels
- To improve the input quality of prospective students based on the competence and origin of domestic and foreign students

#### **OBJECTIVES 01**

To produce graduates who have insight, scientific abilities, and technical skills needed to solve complex problems through an interdisciplinary approach

- To produce researchers in the field of Mathematics and Natural Sciences through theoretical approaches, concepts and paradigms that are appropriate to their areas of expertise and are able to communicate the results of these studies in the form of scientific papers
- To produce graduates who are able to use knowledge and skills in their fields of expertise to help solve problems in society
- To do collaborations at national and international levels with various institutions in the fields of education, research, and community service
- Realizing a study program that has input of qualified prospective students from various regions, both from within and outside the country





able to predict natural phenomena naturally

#### COMMUNICATORS

able to publish the results of their works in international journals and communicate them with peer groups, scientific communities, and related communities

**LEADERS** 

able to help solve problems in society

PRACTITIONERS

able to develop knowledge in the field of mathematics and natural sciences in research and applications oriented to life and health sciences, industry, and the environment

MANAGERS

able to conduct research independently or in groups

### 4 Areas of Interest



#### **BIOLOGY**

Offers 4 study concentrations: Environmental Biology, Botany, Microbiology, and Zoology

#### **PHYSICS**

Offers 2 study concentrations: Biophysics and Laser Biooptics.



# WISUDA JUNITARIA MALANCA UNIVERSITAS AIRLANGGA Excellence with Myalty

#### **CHEMISTRY**

Offers 3 study concentrations: Biochemistry, Analytical Chemistry and Organic Chemistry.

#### **MATHEMATICS**

Offers 2 study concentrations: Analysis and Algebra, and Applied Mathematics



EURRIEULUM

The curriculum of Doctoral Program of Mathematics and Natural Sciences is a RESEARCH-BASED curriculum and designed for a 3 (three) years learning period with a minimum 42 credits.

Students are still allowed to take lectures that support their dissertation research, but this is non-credit. Students can also take courses in other study programs or courses held by the Promoter/Co-Promoter

The curriculum components are divided into Non-Dissertation Components (18 credits) and Dissertation Components (24 credits).



# Non-Dissertation Components

- Qualification Exam
- ☐ Periodic Seminars (Seminar 1,2,3)
- International Publications
- International Conference

#### **Dissertation Components**

- Dissertation Proposals
- ☐ Dissertation (Manuscript Eligibility Examination, Closed Dissertation Examination, and Open Dissertation Examination)

# **Curriculum Structure**

# SEMESTER 1

Qualification Exam Sit-in lectures as needed (non-credits) Dissertation Proposals

# SEMESTER 2

Sit-in lectures as needed (non-credits)
Seminar 1\*
International Conference

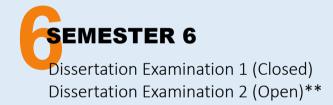
# SEMESTER 3 Seminar 2\*

Publications 1 (*published*)

# SEMESTER 4

Seminar 3\*
Publications 2 (accepted)

# SEMESTER 5 Eligibility Examination



- \* Seminars 1, 2, 3 are courses in a series of study activities which as a whole have 2 credits.

  The score of this course will be given after all seminars 1, 2 and 3 have been taken by students.
- \*\* Students who have 3 (three) publications in reputable international journals during their doctoral studies can be exempted from the Open Dissertation Examination



#### DOCTORATE

#### can be given if

- study period is not more than 14 semesters,
- ☐ minimum GPA 3,00,
- □ have publications in international journals indexed by ISI Knowledge-Thomson Reuter, SCOPUS or Microsoft Academic Search as the first author with 1 (one) published status and 1 (one) accepted status
- □ have 1 (one) publication in international conference proceedings indexed by ISI Knowledge-Thomson Reuter, SCOPUS or Microsoft Academic Search, and
- submit proofs of publications after the Open Examination
- □ have a TOEFL/ELPT certificate with a minimum score of 500

# STUDY PROGRAM EXCELLENCE

☐ Accredited A by BAN PT

be seen at

- ☐ In the first year of study, students can start their research with their potential promoters, so that the study time can be shortened
- ☐ A list of potential promoters and copromoters from all areas of interest and their research publications can be accessed at <a href="https://doktor.fst.unair.ac.id/staf-pengajar">https://doktor.fst.unair.ac.id/staf-pengajar</a>
- ☐ Laboratory facilities for on-campus research can be seen at
- <a href="https://doktor.fst.unair.ac.id/sarana-umum/">https://doktor.fst.unair.ac.id/sarana-umum/</a><a href="https://doktor.fst.unair.ac.id/sarana-umum/">Student publications for the last 2 years can</a>
  - https://doktor.fst.unair.ac.id/publikasi/







Have GPA master program ≥ 3,00



have a linear research proposal plan with the master's thesis topic



Submit a list of scientific publications produced in the last 5 years



Have a letter of recommendation from a potential promoter

The selection process is divided into written test and non-written test. The materials for the written test are TPA (Academic Potential Test), English test and interview. In the non-written test selection, apart from interviews, there are special requirements that must be met.

# Postgraduate Student Association (HIMAPASCA)



HIMAPASCA is an association of postgraduate students at the Faculty of Science and Technology consisting of students from the Masters program in Biology, Chemistry, Biomedical Engineering, and Mathematics as well as students from the Mathematics and Natural Sciences Doctoral Program.

#### **VISION**

"To become a quality and excellent student association at the national and international levels based on religious morality"

#### **MISSIONS**

- To establish and maintain open communication between administrators and members of the postgraduate student association
- To provide a forum for activities, discussions, and creativity to develop the potential and insights of postgraduate students
- **03** To disseminate information relating to graduate student associations

# Gallery HIMA-PASCA





























# Registration of Prospective Students

Registration and selection of prospective new students is carried out centrally at the university level under coordination of Pusat Penerimaan Mahasiswa Baru (PPMB).

Information on new student admissions can be seen at www. ppmb.unair.ac.id/

Upload the registration file at www.pendaftaran.unair.ac.id/



#### Address:

Jln. Dr. Ir. H. Soekarno No. 123, Mulyorejo, Surabaya, Jawa Timur 60115

Phone : 031 - 5956009, 5956010, 5956013 WA Only : 0821-3861-1156, 0813-5885-0855

Fax : 031 - 5956027

Email : info@ppmb.unair.ac.id

# SCHOLARSHIPS



### LPDP (Lembaga Pengelola Dana Pendidikan) - Kemenkeu

www.lpdp.kemenkeu.go.id



#### BU (Beasiswa Unggulan) - Kemdikbud

www.buonline.beasiswaunggulan.kemdikbud.go.id



#### **Dexa Award Science Scholarship**

www.dexascholarship.com



#### **Beasiswa Bakrie**

www.untuknegeri.org/yayasan-bakrie-center-foundation/



# PMDSU (Pendidikan Magister menuju Doktor untuk Sarjana Unggul)

www.pmdsu.com



#### ADS (Airlangga Development Scholarship) - foreigner

www.global.unair.ac.id/ads/



### KNB Scholarship (Kemitraan Negara Berkembang) - foreigner

www.knb.kemdikbud.go.id

# PERSON IN CHARGE

01



#### **MASTER PROGRAM OF BIOLOGY**

Prof. Dr. Alfiah Hayati, M.Kes. Email: alfiah-h@fst.unair.ac.id Phone: 081330950399

#### **MASTER PROGRAM OF CHEMISTRY**

Yanuardi Raharjo, M.Sc., Ph.D. Email: yanuardiraharjo@fst.unair.ac.id Phone: 08563320757



02

03



#### **MASTER PROGRAM OF BIOMEDICAL ENGINEERING**

Prof. Dr. Suryani Dyah Astuti, M.Si. Email: suryanidyah@fst.unair.ac.id Phone: 082143211353

#### **MASTER PROGRAM OF MATHEMATICS**

Dr. Nur Chamidah, M.Si. Email: nur-c@fst.unair.ac.id Phone: 081331140657



04

05



# DOCTORAL PROGRAM OF MATHEMATICS & NATURAL SCIENCES

Dr. Dwi Winarni, M.Si. Email: dwi-w@fst.unair.ac.id Phone: 08175093047

#### POSTGRADUATE PROGRAMS

#### **FACULTY OF SCIENCE AND TECHNOLOGY**

UNIVERSITAS AIRLANGGA

Campus C Jl. Dr. Ir. H. Soekarno, Mulyorejo, Surabaya 60115 Phone (031) 5936501 Fax (031) 5936502



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fsaintek



Fakultas Sains dan Teknologi Universitas Airlangga