IT’S A NEW DAWN

GRADUATE SCHOOL OF
Institut Teknologi Bandung
2018-2019

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Regardless of your previous background, a decision of pursuing graduate education is not an easy process; it is a new dawn in your life that you should approach with a lot of considerations. You should go to graduate school when you decide that you would like the most out of the experience.

When it comes to choosing graduate school and graduate program, a few considerations spring to your mind: scholarly reputation in the area of your interest, the quality of the faculty, both in teaching, and in research, and the quality of student colleagues. In these regards, the Graduate School of The Institut Teknologi Bandung, has a lot to offer you, in the area of sciences, engineering, business and arts. With their commitment to research, the faculty member of ITB bring the experience from the fields to classrooms and laboratories to shape your experience in advanced learning of a specialized discipline or sub discipline; preparing you to advance professionally in your future careers.

The success of graduate education does not solely depend on the quality of the instructions. Graduate programs thrive on the lively interactions between students and the academic communities. Our faculty members are among finest academically, with national and international reputations. Involvement in faculty’s research is our way of strengthening our graduate program, and at the same time provides the students with the opportunity to undertake research that is relevant to our mutual interests. Here at ITB, you will meet fellow students from various cultures, eager to learn themselves, making ITB a fertile ground for exchanging ideas and developing you, both personally and academically. So, when you are thinking for a new dawn of your graduate education, ITB may be a right place for you. We look forward to welcoming you to our campus.

Pudji Astuti
Dean of Graduate School
and Professor of Mathematics
Institut Teknologi Bandung is Indonesia’s premier school of science, engineering, and arts, with a mission to create, to apply, and to share the knowledge of science, technology, and art, for the advancement of Indonesia and humanity in large. The Graduate School of ITB equips students with advanced learning of a specialized discipline or sub-discipline, gives an in-depth understanding so that the student becomes something of an expert in the particular topic of study. Through involvement in research, students learn advanced skills in such areas as problem-solving, methodology, communication, both in writing and oral presentation, and technology, such as applied to the particular field of study.

Doctoral programs prepare students to be leaders of research and research groups, conceiving and promoting new ideas. Master’s programs train students to participate as part of a team carrying out advanced work. Some of the master’s programs is geared towards training professional practitioners, such as master’s Program in Management, Master’s Program for teachers. Our master’s four-semesters program, while doctoral program is six semester beyond master’s program. For students with excellent track records, we offer master’s leading to doctoral programs, which takes eight semesters combined.

In collaboration with Rijnvrijeuniversiteit Groningen (RUG) the Netherlands, UKM (Universitas Kebangsaan Malaysia), UGM & Universitas Karlsruhe (TH) Germany, IFP School (France Institute of Petroleum Postgraduate School) Perancis, UGM-UNESCO-Osaka University, Kyoto University, Kanazawa University, Japan, ITB offers an opportunity to obtain a double master degrees.
The history of Institut Teknologi Bandung dates back to 1920 during colonial time, with the establishment of Technische Hogeschool te Bandoen (TH-Bandoeng). For a very brief period in 1944-1945, it became Kyogyo Daigaku Bandung. After Indonesia independence in 1945, the current campus housed the technical, mathematics and natural sciences, and arts branches of Universitas Indonesia – known as UI-Bandoeng. Finally in 1959, Institut Teknologi Bandung was inaugurated.

The history of graduate education in ITB is as old as ITB itself, which started out as the Technische Hogeschool in 1920. At that time doctoral program was integrated into the faculties of the respected discipline. As ITB moved closer to the Anglo-Saxon system, ITB established the Graduate School in 1976, and started offering master’s programs in 1979, in three disciplines: Mathematics, Physics, and Mechanical Engineering. The Graduate School has since flourished that currently it offers 52 master’s and 26 doctoral programs in various disciplines, and sub-disciplines of sciences, engineering, business, and arts. Since its establishment in 1976 to this day, the Graduate School has inaugurated more than 20,000 master’s and 900 doctoral graduates.
Complex interactions between aesthetics and fashion in conveying styles through traditional cultures of Indonesia and Korea are always intriguing. Here at ITB I am constantly challenged, provoked and inspired by openness and inventiveness of the faculty members, mentors and peers alike.
In the rapidly changing business landscape, competition forces companies not to depend solely on innovation on the product. Network, activity systems, marketing, and distribution must be refined; it is the whole business model that must be innovated. Technological advances should be partnered by smart business models.
Many scientists or even mathematicians say that algebra is a study of abstract nonsense. However, here at ITB, through interactions with engineers, we see those abstract nonsense materialize into indispensable methods or language to secure our digital communication.
Progress by merely following trend is certainly not enough to propel us into frontier. It will need inspiration, initiatives, and massive effort to make a thrust into the limelight. Research in technology is clearly indispensable in this effort. Let us join force, together we make things possible.

Dr. Djoko Sardjadi
Associate Professor, Aerospace Engineering
The main challenge to pharmaceutics is improving drug efficacy, which very much depends on formulation and delivery systems. Rising up to those challenges, using current science and technology for a better quality of human life, is one of the most exciting part of my job.
Our experience of contemporary life is increasingly feed and enriched by communication events in visual language and culture. It is a sign of time that the study of art, design, and craft has become important and urgent in its own right. It is our *raison d’être* of art inside a scientific and technological institute.
The Faculty of Mathematics and Natural Sciences (FMIPA) at Institut Teknologi Bandung (ITB) offers education in four branches of scientific disciplines, namely Astronomy, Chemistry, Mathematics, and Physics. Graduate degrees are offered in the four disciplines via both the pure, and applied sciences tracks.


Graduate programs offered by FMIPA are directly linked to researches in the aforementioned sub-divisions. Students are encouraged to get involved in research, to benefit from its lively environment of scientific endeavor. FMIPA offers the following graduate programs:

1. Master and Doctor in Astronomy
2. Master and Doctor in Mathematics
3. Master and Doctor in Chemistry
4. Master and Doctor in Physics
5. Master and Doctor in Nuclear Science and Engineering *
6. Master in Computational Sciences
7. Master in Actuarial Science
8. Master in Mathematics Teaching
9. Master in Chemistry Teaching
10. Master in Physics Teaching
11. Master in Computational Sciences
12. Master in Actuarial Science
13. Master in Mathematics Teaching
14. Master in Chemistry Teaching
15. Master in Physics Teaching

FMIPA caters to the education of professionals by offering graduate programs such as Master’s Program in Actuarial Science for those wishing to enter the fast-growing insurance industry and Master’s Programs in Mathematics/Chemistry/Physics Teaching, for educators and teachers who wish to improve their knowledge and competence, so as to further their careers.

*to start in 2019
The school offers the following graduate programs:

1. Master’s Program and Doctoral Program in Biology. There are three tracks of research that students may pursue: (1) Cell and Molecular Biology, (2) Organism Biology, (3) Environmental Biology.
2. Master’s Program in Biotechnology, emphasizing on developing high value-added bioproducts for application in health, agriculture, environment, and energy.
3. Master’s Program in Bio Management. This program was developed to respond to the demand for professionals who are able to use interdisciplinary approaches in seeking solutions to tropical bioresources and environmental management problems, which are often complex and multi-dimensional in nature. The School of Business and Management ITB supports this program for subjects related to economics, business and management. Applicants having undergraduate degrees from any disciplines are welcomed.
The School of Pharmacy offers the following:

1. Master’s and Doctoral Programs in Pharmacy, with options in Pharmacochemistry (Chemical Pharmacy, Food Safety Analysis, Medicinal Chemistry), Pharmaceutics (Pharmaceutical Technology, Biopharmacy, Pharmacokinetics, Biotechnological Pharmacy), Natural Product Pharmacy (Pharmacognosy, Phytochemistry, Natural Product Technology, Medicinal Plant Biotechnology), and Pharmacology-Toxicology (Pharmacology, Hospital Pharmacy).

2. Master’s Program in Sport Science.

3. Master’s Program in Industrial Pharmacy.

In the continuation of professional development, the School of Pharmacy offers Profession Pharmacist education, a one-year program beyond undergraduate program in pharmacy.
Faculty of Petroleum Engineering and Mining (Fakultas Teknik Perminyakan dan Pertambangan, FTTM-ITB) was founded in 2007. However, its history traces back to 1948 as a program under the Faculty of Engineering. Through a series of reorganizations the current FTTM came into being. Currently FTTM ITB embodies five fields of study, namely Mining, Petroleum Engineering, Geophysical Engineering, Metallurgy, and Geothermal Engineering.

In the light of Indonesia’s blessed wealth of earth resources and its unique tectonic features, the presence of FTTM ITB is instrumental as a technology development center for the environmentally sustainable exploration, exploitation and utilization of earth resources.


FTTM offers the following graduate programs:
1. Master’s and Doctoral Programs in Petroleum Engineering
2. Master’s Program and Doctoral Program in Mining Engineering, with concentration in Mineral & Coal Management and Economics, Geomechanics
3. Master’s Program and Doctoral Program in Geophysical Engineering
4. Master’s Program in Geothermal Engineering
5. Master’s Program in Metallurgical Engineering
The following graduate programs are offered:

1. Master’s and Doctoral Programs in Geological Engineering, with options in General Geology, Petroleum Geology, Engineering Geology and Economic Geology
2. Master’s and Doctoral Programs in Earth Sciences, with options in Physical Oceanography and Atmospheric Science
3. Master’s in Groundwater Engineering
4. Master’s and Doctoral Programs in Geodetic and Geomatics Engineering, with options in Geodesy, Geomatics, Land Administration, Geospatial-based Disaster Risk Management and Maritime Engineering.
Faculty of Industrial Technology (Fakultas Teknologi Industri-FTI), Institut Teknologi Bandung was established in 1973. The faculty is a home to four disciplines of engineering, those are Chemical Engineering, Engineering Physics, Instrumentation and Control, and Industrial Management.

The faculty is organized in eight research groups as follows:

1. Chemical Engineering Process Design and Development
2. Chemical Engineering Product Design and Development
3. Energy and Chemical Engineering Processing System
4. Engineering Physics
5. Instrumentation and Control
6. Manufacturing Systems
7. Industrial Management
8. Industrial System and Technoeconomics

FTI offers the following graduate programs:

2. Master’s and Doctor in Engineering Physics, with specialization in Industrial Automation Process, Building Physics, and Computation and Material Process
3. Master’s in Instrumentation and Control
4. Master’s and Doctor in Industrial Engineering and Management, with five specializations: Manufacturing System, Ergonomics and Performance Engineering, Industrial Management, Enterprise Information System, as well as Industrial Systems and Supply Chain
5. Master’s in Application Oriented Logistics.
FMAE offers the following graduate programs:
1. Master’s and Doctoral Program in Mechanical Engineering
2. Master’s and Doctoral Program in Aerospace Engineering,
3. Master’s and Doctoral Program in Material Science and Technology

Apart from the regular programs, FMAE also offers Double Degree Master’s and Doctoral Programs with the following partners:
1. Czech Technical University (CTU) in Prague, Czech Republic
2. University of Twente, The Netherlands
3. Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea
4. Hiroshima University, Japan

The Faculty of Mechanical and Aerospace Engineering (FMAE) or Fakultas Teknik Mesin dan Dirgantara (FTMD), Institut Teknologi Bandung was established in 2008, in a reorganization of ITB. Previously, FMAE was a part of the Faculty of Industrial Engineering (FTI).

STEI offers the following graduate programs:

1. Master’s and Doctoral Programs in Electrical Engineering, with the following concentrations: Electric Power, Telecommunication, Telematics and Telecommunication Network, Computer Engineering, Electronics, Biomedical Engineering, Control and Smart System Engineering, Digital Media and Game Engineering, Engineering and Management of Information Security, Information Technology Leaderships, and Information Technology Services.

2. Master’s and Doctoral Programs in Informatics, with the following concentration: Software Engineering, Information Systems, Information Technology, Computer Engineering, Electronics, Biomedical Engineering, Control and Smart System Engineering, Digital Media and Game Engineering, Engineering and Management of Information Security, Information Technology Leaderships, and Information Technology Services.

The School of Electrical Engineering and Informatics (School Teknik Elektro dan Informatika, STEI) at Institut Teknologi Bandung was officially established on January 1, 2006. It is a merger of two departments at ITB, i.e. Electrical Engineering Department and Informatics Department. These two departments have a long history of establishing higher education in Indonesia in the fields of Electrical Engineering (since 1947) and Informatics (since 1982). STEI’s graduate programs are oriented towards research with objectives to develop and educate graduates to have a high level of integrity, creativity, and ability to continuously learn not only how to be adaptive in changing science and technology, but also how to apply the knowledge to their profession so they may contribute to the knowledge in Electrical Engineering and Informatics to support Indonesia’s development.
FTSL runs a number of graduate programs:

1. Master’s and Doctorate in Civil Engineering, with specialization in Structural Engineering, Water Resource Engineering, Geotechnical Engineering, Transportation Engineering, Construction Engineering and Management, as well as Infrastructure Engineering and Management
2. Master’s and Doctorate in Environmental Engineering, with specialization in environmental protection and management; sustainable development, and sanitation infrastructure
3. Master’s in Ocean Engineering Presently, this program offers two specialized fields of subject: Coastal Engineering and Offshore Engineering
4. Professional Master’s Program In Water Resources Management 
   The program equips students to become expert practitioners and water resources management specialists, mainly in tropical regions
5. Master’s in Highway Engineering and Development
6. Master’s Program in Water Supply and Sanitation Infrastructure Management
The School of Architecture, Planning and Policy Development, Institut Teknologi Bandung (SAPPD ITB) or Sekolah Arsitektur, Perencanaan dan Pengembangan Kebijakan (SAPPK ITB) offers seven main professional disciplines as follows: Architecture, Urban and Regional Planning, Urban Design, Transportation Planning, Development Studies, Tourism Planning, and Landscape Architecture.

SAPPD offers the following graduate programs:

1. Master’s and Doctoral Programs in Architecture
2. Master’s and Doctoral Programs in Urban and Regional Planning
3. Master’s and Doctoral Programs in Transportation Planning
4. Master’s Programs in Urban Design
5. Master’s Programs in Development Studies
6. Master’s Programs in Tourism Planning
7. Master’s Programs in Landscape Architecture

SAPPD ITB has extensive links and exchange agreements with a number of leading international universities in Europe, Asia, Australia and United States of America. Along with the previously established Double Degree programs with universities in the Netherlands (Groningen, Twente/ITC) and Japan (Ritsumeikan, Keio, Miyazaki, Yamaguchi), starting in 2012 the SAPPD initiated new programs including student exchange, summer camp (international joint design/planning studio), collaborative research, and three-year double-degree program with universities in the United States of America (Florida), Australia (Sydney, Melbourne), and Japan (Hiroshima, Shibaura, Kitakyushu, TIT). To serve the graduate programs as well as to conduct independent and collaborative research, SAPPD is supported by nine research groups as follows: urban planning and design, regional and rural planning, regional and urban infrastructure system, policy planning and development management, economic system and modelling, architectural design, building technology, housing and human settlement, and architectural history, theory and criticism.
1. **Master’s Program in Visual Arts** with two academic tracks: i) **studio practice** track culminating in exhibition or performance, and ii) **research practice** in the areas of aesthetics, theory of art, art history or other related issues in the domain of visual arts.

2. **Master’s Program in Design.** This program offers seven fields of design research: (1) **Design and Artefact**, (2) **Design and Material**, (3) **Design and Systems**, (4) **Design and Visual Culture**, (5) **Design and Environment**, (6) **Design and Human Behavior**, and (7) **Design and Information**. At the end of their studies, candidates are expected to produce a project-based or research-based thesis.

3. **Doctoral Program in Visual Arts and Design.** This program requires candidates to be grounded in either studies of visual arts (paintings, printmaking, sculptures, and ceramics) or studies of design (products, visual communication, interior, and crafts). Furthermore, the university strongly encourages candidates to undertake interdisciplinary studies within the domain of creative research.

The following are graduate programs offered by FSRD:

1. **Master’s Program in Visual Arts** with two academic tracks: i) studio practice track culminating in exhibition or performance, and ii) research practice track in the areas of aesthetics, theory of art, art history or other related issues in the domain of visual arts.

2. **Master’s Program in Design.** This program offers seven fields of design research: (1) Design and Artefact, (2) Design and Material, (3) Design and Systems, (4) Design and Visual Culture, (5) Design and Environment, (6) Design and Human Behavior, and (7) Design and Information. At the end of their studies, candidates are expected to produce a project-based or research-based thesis.

3. **Doctoral Program in Visual Arts and Design.** This program requires candidates to be grounded in either studies of visual arts (paintings, printmaking, sculptures, and ceramics) or studies of design (products, visual communication, interior, and crafts). Furthermore, the university strongly encourages candidates to undertake interdisciplinary studies within the domain of creative research.
The following graduate programs are offered:

1. Master in Business Administration. The program is offered in both Ganesha Bandung and Jakarta campuses. Two tracks are offered for this particular program: Entrepreneurial Track (Entrepreneurship MBA, MBA in Creative and Cultural Entrepreneurship) and Professional Track (Young Professional, Executive MBA, Business Leadership Executive MBA, Global Management, Global Leadership Executive MBA which is a dual degree program between ITB and Finland’s prestigious university, the Aalto University).

2. Master of Science in Management (MSM), is intended for students with various backgrounds who wish to improve their knowledge and skills in management science through research. Program’s length is 18 months.

3. Doctor of Science in Management (DSM), is intended for one who wishes to become a scholar and a practitioner with innovative, creative, and independent researcher mindset in the field of management. Competitive scholarships are available for highly qualified students.
Research Centers in ITB reflect ITB’s priority research areas. They house multi-disciplinary studies which defy common boundaries of Faculties and Schools. Those are:

1. Research Center for Hazard and Mitigation
2. Research Center for New and Renewable Energy
3. Research Center for Information and Communication Technology
4. Research Center for Bioscience and Biotechnology
5. Research Center for Infrastructure and Regional Development
6. Research Center for Cultural and Environmental Products
7. Research Center for Nanoscience and Nanotechnology
8. Research Center for Industrial Engineering
9. Center for Mathematical Modeling and Simulations
10. Center for Microelectronics
11. Center for Tourism Planning and Development
12. Center for Environmental Studies
13. Center for Coastal and Marine Development
15. Center for Remote Sensing
16. Center for Instrumentation Technology and Automation
17. Center for Public Policy and Governance
18. Center for Spatial Data Infrastructures
19. Center for Empowerment of Open Source Software
20. Center for Health and Sport Technology
21. Center for Tracking System Studies
22. Center for Logistics and Supply Chain Studies
23. Center for Water Resources Development
24. Center for Climate Change
25. Center for Rural Areas Empowerment
26. Center for Agrarian Studies
27. Center for Sustainable Transportation Technology Development
28. Center for Defense and Security Technology
29. ITB Halal Center

More specific research is carried out in Centers. Those are:

1. Center for Industrial Engineering
2. Center for Mathematical Modeling and Simulations
3. Center for Microelectronics
4. Center for Tourism Planning and Development
5. Center for Environmental Studies
6. Center for Coastal and Marine Development
7. Center for Research on Energy Policy
8. Center for Remote Sensing
9. Center for Instrumentation Technology and Automation
10. Center for Public Policy and Governance
11. Center for Spatial Data Infrastructures
12. Center for Empowerment of Open Source Software
13. Center for Health and Sport Technology
14. Center for Tracking System Studies
15. Center for Logistics and Supply Chain Studies
16. Center for Water Resources Development
17. Center for Climate Change
18. Center for Rural Areas Empowerment
19. Center for Agrarian Studies
20. Center for Sustainable Transportation Technology Development
21. Center for Defense and Security Technology
22. ITB Halal Center
Recent acquisition and establishment of Jatinangor Campus, to the East of Bandung, has practically tripled the campus area of ITB. A few programs, such as Bioengineering and Forestry, have started their activities in the new campus in the 2013 academic year. We look forwards to livelier activities in the coming years as more programs and research extend their activities to the new campus. In the mean time ITB is committed to keep and practice sustainable both campus green and sustainable.