2016-2017
edition

UNIVERSITAS INDONESIA
Veritas, Probitas, Iustitia

FACULTY OF ENGINEERING

FACULTY OF ENGINEERING
UNIVERSITAS INDONESIA

ACADEMIC GUIDEBOOK

ACADEMIC GUIDEBOOK

FACULTY OF ENGINEERING
UNIVERSITAS INDONESIA

2016-2017 edition

The Committee

Chair : Dean of Engineering
Prof. Dr. Ir. Dedi Priadi, DEA

Advisory Committee:
Dr. Ir. M. Asvial, M.Eng
Dr. Ir. Hendri D.S. Budiono, M.Eng

Editor:
Dr. Ir. Wiwik Rahayu, DEA
Mulia Orientilize, ST., M.Eng
Dr. Ir. Gabriel SB Andari M.Eng
Dr. Ario Sunar Baskoro S.T., M.T., M.Eng
Dr.Eng. Radon Dhelika B.Eng., M.Eng.
Dr.Eng. Arief Udhiarto, ST., MT
Dr. Catur Apriono S.T., M.T., Ph.D
Dr. Deni Ferdian S.T., M.Sc.
Wahyuaji Narottama Putra S.T., M.T.
Rini Suryantini S.T., M.Sc
Rossa Turpuk Gabe S.Ars., M.Ars.
Prof. Dr. Ir. Nelson Saksono M.T.
Dr. Dianursanti, ST., MT
Dr-Ing. Amalia Suzianti
Shabila Anjani, ST, MT
Tikka Anggraeni, M.Si
Rengga Satrio Wibisono, S.Sos

Cover and Separator Design :
Irma Lupita Permanasari, S.Ars
Widiya Prastiwi, S.Ikom

Published by:

Faculty of Engineering
University of Indonesia

Kampus UI, Depok 16424
Tel. (021) 7863503-05, 727 0011
Fax. (021) 727 0050
Email: humas@eng.ui.ac.id
http://www.eng.ui.ac.id/
ISBN 978-979-9385-17-8

For more Information:
Pusat Administrasi Fakultas (PAF)
Kampus UI, Depok 16424
Tel. (021) 7863311, 78887861, 78888076
Fax. (021) 7863507
http://www.eng.ui.ac.id

Welcome to FTUI

Welcome to FTUI !

On behalf of the Faculty of Engineering Universitas Indonesia, I would like to extend our warmest welcome to all students joining us this year. Our faculty is one of the largest faculties in the Universitas Indonesia and is proud to call our self as one of the leading education and research institution in Indonesia. With the support of our faculty members, we provide great learning and research environment for our students.

This 2016 Academic Guidebook is intended for all students of the Undergraduate Program (Regular, Parallel, International), Master Program and Doctor Program, to be used during their study at the Faculty of Engineering Universitas Indonesia. Curriculum structure, and academic staff are listed, as well as all support provided for you. The information contained within this book is also useful for those considering of continuing their study in engineering field at the Universitas Indonesia. Within the 2016 edition, we have made and included some corrections such as: the curriculum structure, updated list of teaching staff, and updated information.

Within this guidebook, you will also find general information on FTUI and all of our Departments/ Study Programs, education system as well as the structure curriculum of subjects taught at all of our Undergraduate, Master and Doctor Programs in our seven departments: Department of Civil Engineering, Department of Mechanical Engineering, Department of Electrical Engineering, Department of Metallurgy & Material Engineering, Department of Architecture, Department of Chemical Engineering, and Department of Industrial Engineering.

Lastly, I would like to convey my gratitude and appreciation to all faculty members which have helped with the compilation of this guidebook, especially the Vice Dean for Education, Research and Student Affairs; Vice Dean for Resources, Venture and Public Administration; Associate Dean for Education and Head of Faculty Adminstrative Center; Associate Dean for General Affairs and Facilities; Heads and Vice Heads of Departments; the committee and all informants. Let us move forward towards making Faculty of Engineering Universitas Indonesia as a leading engineering education institution which produces graduates with the competencies and attributes that are sufficient to be able to compete in the international community.

Depok, July 2016

Faculty of Engineering Universitas Indonesia
Dean,

Prof. Dr. Ir. Dedi Priadi, DEA

CONTENTS

PROFILE OF FTUI
AND DEPARTMENTS

1. PROFILE OF FTUI AND DEPARTMENTS

1.1. HISTORY OF FTUI

The history of the Faculty of Engineering, Universitas Indonesia (FTUI) began with an offer made from young engineers belonging to the Society of Engineers Indonesia (PII), to the first President of the Republic Indonesia, Bung Karno, for the renovations of the heavily damaged main streets of Jakarta. At that time Jakarta was preparing for the International Sports Event, the GANEFO. This bid was welcomed by President Soekarno. The young engineers were granted permission to start the renovations under the condition that all work must be completed within two weeks period. Headed by Ir. Bratanata, Ir. Roosseno, Ir. Sutami, and Ir. A.R. Soehoed, the project was completed on time.

After successful accomplishment of the street renovation project, these young engineers with their iron will felt that there was more that they could do to serve our country. But what? Then they thought of a brilliant idea: “Why not establish an engineering faculty in Jakarta as an alternative to the one in Bandung? This way those residing in the country’s capital would not need to travel far to Bandung for an engineering education”.

During the ceremonial event of Lenso dancing at the Pembangunan Building (formerly known as Pola Building) to welcome the GANEFO guests of honor, the young engineers brought their idea to President Soekarno to which he responded by inviting them to the Presidential Palace the next day. During the meeting in the Presidential Palace, the President wholeheartedly approved of the idea and even directly appointed Prof. Ir. Rooseno as the first Dean of the Faculty of Engineering. The President also instructed that the new Faculty of Engineering would be part of the University of Indonesia under the leadership of its Rector, dr. Syarief Thayeb.

The Establishment of Faculty of Engineering UI

Once dr. Syarief Thayeb served as the Minister of Higher Education and Science, he issued Decree No. 76 dated July 17, 1964 regarding the establishment of the Faculty of Engineering. Faculty of Engineering was officially established in Jakarta without any official ceremony or celebration, under the banner of the University of Indonesia as youngest faculty. And so the history of the Faculty of Engineering Universitas Indonesia began with the first three Study Programs with their respective Head of Study Programs: Ir. Sutami as Head of Civil Engineering Study Program, Ir. Ahmad Sayuti as Head of Mechanical Engineering Study Program and Ir. K. Hadinoto as Head of Electrical Engineering Study Program.

The Metallurgy and Architecture Study Programs were opened the following year with their respective Head of Study Programs: Dr.Ing. Purnomosidhi H. and Ir. Sunaryo S.. Ir. Roosseno as Dean was assisted by Ir. Sutami as Vice Dean for Academic Affairs, Ir. Slamet Bratanata as Vice Dean for Administration and Finance and Dr. Ing Purnomosidhi H. as Vice Dean for Student Affairs and Alumni. In its early acitivities in 1964, Faculty of Engineering UI was supported by 30 lecturers and 11 non-academic employees offering a 32 course subject curriculum. The first class of Faculty of Engineering UI consisted of 199 students. In five and a half years, 18 of them had successfully completed their study and graduated as certified Engineers.

In 1985, the study program Gas Engineering (originally under the Metallurgy Study Program) joined the study program Chemical Engineering (originally under the Mechanical Study Program) and formed the Gas and Petrochemical Engineering Study Program with its first Head of Study Program, Dr. Ir. H. Rachmantio. The Industrial Engineering Study Program, the youngest Study Program in Faculty of Engineering UI, was opened in 1999 with its first Head of Study Program, Ir. M. Dachyar, M.Sc. The term Study Program was later changed to Department and is still used today.

1.2. VISION AND MISSION OF FTUI

FTUI Vision

FTUI as a leading engineering education institution with the ability to compete in the international world.

FTUI Mission:

- Preparing its graduates to become lifelong learners, to be able to adapt to the working environment, and to acquire decent personalities and leadership qualities.
- To be center of excellence for education and research activities, to serve stakeholders' needs through facilitation of conducive academic environment.
- To be a leading institution with the initiatives that responds to local, national and global societal needs.

1.3. UI and FTUI Administration

UI

Rector:

Prof. Dr. Ir. Muhammad Anis. M. Met.

Deputy Rector for Academic and Student Affairs:

Prof. Dr. Bambang Wibawarta, S.S., M.A.

Deputy Rector for Finance, Logistic and Facilities:

Prof. Dr. Adi Zakaria Afiff

Deputy Rector for Research, and Innovation

Prof. Dr. rer. nat Rosari Saleh

Deputy Rector for for Human Resources, Development and Cooperation

Dr. Hamid Chalid, S.H., LL.M

FTUI

Dean of Engineering:

Prof. Dr. Ir. Dedi Priadi, DEA

Vice Dean I:

Dr. Ir. Muhamad Asvial, M.Eng

Vice Dean II:

Dr. Ir. Hendri DS Budiono, M.Eng

Associate Dean for Academic and Head of Faculty Administration Center:

Dr. Ir. Wiwik Rahayu, DEA

Associate Dean for Research & Community Service

Prof. Dr. Ir. Akhmad Herman Yuwono, M.Phil.Eng

Associate Dean for Cooperation, Students Affairs, Alumni & Venture :

Dr. Badrul Munir, ST., M.Eng.Sc

Associate Dean for General Affairs & Facilities

Jos Istiyanto, S.T., M.T., Ph.D

Head of Academic Quality Assurance Unit

Prof. Ir. Mahmud Sudibandriyo, M.Sc., Ph.D

Head of Management System Assurance Development Unit

Dr. Ir. Rahmat Nurcahyo, M.Eng. Sc.

Departments

The following are list of Head of Department, and Vice Head of Department:

Civil Engineering:

Prof. Ir. Widjojo A. Prakoso, M.Sc., Ph.D

Mulia Orientilize, S.T., M.Eng

Mechanical Engineering:

Dr.-Ing. Ir. Nasruddin, M.Eng

Dr. Ario Sunar Baskoro, ST., MT., M.Eng

Electrical Engineering:

Ir. Gunawan Wibisono, M.Sc., Ph.D

Dr. Arief Udhiarto, S.T., M.T

Metallurgy & Materials Engineering:

Dr. Ir. Sri Harjanto

Dr. Deni Ferdian, ST, M.Sc

Architecture:

Prof. Yandi Andri Yatmo, S.T., M.Arch., Ph.D

Rini Suryantini, S.T., M.Sc

Chemical Engineering:

Prof. Ir. Sutrasno Kartohardjono, M.Sc., Ph.D

Dr. Ir. Nelson Saksono, M.T.

Industrial Engineering:

Dr. Akhmad Hidayatno, S.T., MBT.

Dr.-Ing. Amalia Suzianti, ST., M.Sc.

BOARD OF PROFESSORS

Prof. Dr. Ir. Budi Susilo Soepandji
Prof. Dr. Ir. Sutanto Soehodo, M. Eng
Prof. Dr. Ir. Tommy Ilyas, M.Eng
Prof. Dr. Ir. Irwan Katili, DEA
Prof. Dr. Ir. I Made Kartika, Dipl. Ing.
Prof. Dr. Ir. Raldi Artono Koestoer
Prof. Dr. Ir. Bambang Sugiarto, M.Eng
Prof. Dr. Ir. Yanuar, M.Eng
Prof. Dr. Ir. Tresna P. Soemardi
Prof. Dr. Ir. Budiarso, M.Eng
Prof. Dr. Ir. Yulianto S. Nugroho, M.Sc
Prof. Dr.-Ing. Nandy Putra
Prof. Dr. Ir. Djoko Hartanto, M.Sc
Prof. Dr. Ir. Dadang Gunawan, M.Eng
Prof. Dr. Ir. Bagio Budiardjo, M.Sc
Prof. Dr. Ir. Eko Tjipto Rahardjo, M.Sc
Prof. Dr. Ir. Harry Sudibyo
Prof. Ir. Rinaldy Dalimi, M.Sc., Ph.D
Prof. Dr. Ir. Rudy Setiabudy, DEA
Prof. Dr. Ir. Iwa Garniwa, MK., MT
Prof. Dr. Ir. Nji Raden Poespawati,MT
Prof. Dr.-Ing. Ir. Bambang Suharno
Prof. Dr. Ir. Bondan T. Sofyan, M.Si
Prof. Ir. Triatno Yudo Harjoko, M.Sc., Ph.D
Prof. Dr. Ir. Abimanyu Takdir Alamsyah, MS
Prof. Dr. Ir. Widodo Wahyu P, DEA
Prof. Dr. Ir. M. Nasikin, M.Eng
Prof. Dr. Ir. Anondho W., M.Eng
Prof. Dr. Ir. Setijo Bismo, DEA
Prof. Dr. Ir. Slamet, M.T
Prof. Dr. Ir. T. Yuri M. Zagloel, M.Eng.Sc
Prof. Ir. Sutrasno Kartohardjono, M.Sc., Ph.D
Prof. Dr. Ir. Yusuf Latief, MT
Prof. Dr. Ir. Dedi Priadi, DEA
Prof. Dr. Ir. Harinaldi, M.Eng
Prof. Dr. Ir. Djoko M Hartono, SE., M.Eng
Prof. Dr. Ir. Muhammad Anis, M.Met
Prof. Ir. Isti Surjandari Prajitno, MT., MA., Ph.D
Prof. Dr. Ir. Danardono Agus S, DEA
Prof. Dr. Heri Hermansyah, S.T., M.Eng.
Prof. Dr. Ir. Sigit P. Hadiwardoyo, DEA
Prof. Dr. Ir. Muhammad Idrus Alhamid

Prof. Dr. Ir. Riri Fitri Sari, M.Sc.MM
Prof. Dr. Benyamin Kusumoputro, M.Eng
Prof. Dr. Ir. Kalamullah Ramli, M.Eng
Prof. Dr. Ir. Eddy S. Siradj, M.Sc
Prof. Dr. Ir. Johny Wahyuadi Mudaryoto
Prof. Dr. Ir. Anne Zulfia, M.Sc
Prof. Dr. Ing. Ir. Misri Gozan, M.Tech.
Prof. Ir. Mahmud Sudibandriyo, M.Sc., Ph.D
Prof. Dr. Ir. A. Herman Yuwono, M.Phil.Eng
Prof. Yandi A. Yatmo, S.T., M.Arch., Ph.D
Prof. Dr. Kemas Ridwan Kurniawan, ST., M.Sc
Prof. Dr. Ir. Adi Surjosatyo, M.Eng
Prof. Ir. Widjojo Adi Prakoso, M.Sc., Ph.D
Prof. Dr. Ir. Winarto, M.Sc
Prof. Dr. Ir. Nelson Saksono, MT

INTERNATIONAL ADJUNCT PROFESSOR

Prof. Dr. James-Holm Kennedy,University of Hawaii, USA.
Prof. Dr.-Ing. Axel Hunger, University of Duisburg, Germany.
Prof. Josaphat Tetuko Sri Sumantyo, PhD, Chiba University, Japan, Remote Sensing
Prof. Dr. Fumihiko Nishio, Chiba University, Japan, ICT
Prof. Chit Chiow (Andy) Tan, School of Mechanical, Manufacturing and Medical Engineering, Queensland University of Technology, Australia, Mechanical Engineering
Prof. Kozo Obara, Dept. of Nanostructure and Advanced Materials, Kagoshima University, Japan, Nanomaterial dan Energi
Prof. Freddy Y.C. Boey, Nanyang Technological University, Singapore, Nanomaterial dan Biomedical Engineering
Prof. Kyoo-Ho Kim, Dr.Eng, School of Material Science and Engineering, Yeungnam University, Korea, Nanomaterial dan Energi
Prof. Bernard Cambou, Ecole Centrale de Lyon,France, INRETS (French National Institue for Transport and Safety Engineering), Transport and Safety
Prof. Chia-Fen Chi, Dept. of Industrial Engineering, National Taiwan University Science and Technology, Industrial Management
Prof. Dr. Katsuhiko Takahashi, Dept. of Artificial Complex Systems Engineering, Hiroshima University, Japan, Artificial Complex System Engineering
Prof. Martin Betts, Faculty of Built Environment and Engineering, Queensland University of Technology, Australia.
Prof. L. P. Lighart (Emeritus), Delft University of Technology, Dutch
Prof. Dr. Koichi Ito (Printed Antenna, Small Antenna, Medical Application of Antenna, Evaluation of Mutual Influence between Human Body and Electromagnetic Radiations), Chiba University, Japan.
Prof. Dr. Uwe Lahl
Prof. Tae-Jo. Ko.
Prof. Michiharu Tabe, Research Institute of Electronics, Shizuoka University
Prof. Masaki Nagatsu, Shizuoka University
Prof. Hidenori Mimura, Shizuoka University

1.4. ACADEMIC PROGRAMS AT FTUI

FTUI consists of seven Departments and **twelve Undergraduate Study Programs**:

(1) Civil Engineering
(2) Environmental Engineering
(3) Mechanical Engineering
(4) Marine Engineering
(5) Electrical Engineering
(6) Computer Engineering
(7) Metallurgy & Materials Engineering
(8) Architecture
(9) Interior Architecture
(10) Chemical Engineering
(11) Bioprocess Engineering
(12) Industrial Engineering

seven Master Programs:

(1) Civil Engineering
(2) Mechanical Engineering
(3) Electrical Engineering
(4) Metallurgy and Material Engineering
(5) Architecture
(6) Chemical Engineering
(7) Industrial Engineering

and **seven Doctoral Programs:**

(1) Civil Engineering
(2) Mechanical Engineering
(3) Electrical Engineering
(4) Metallurgy and Material Engineering
(5) Architecture
(6) Chemical Engineering
(7) Industrial Engineering

and **one Professional Program for Architect**

Accreditation of FTUI Academic Programs

The National Board of Accreditation for Higher Education (BAN-PT) has awarded the following accreditation level for all study program in the Faculty of Engineering:

for Bachelor Programs:

Civil Engineering : A
Mechanical Engineering : A
Electrical Engineering : A
Metallurgy & Material Engineering : A
Architecture : A
Chemical Engineering : A
Industrial Engineering : A
Naval Architecture & Marine Engineering : A
Computer Engineering : B
Environmental Engineering : B
Architecure Interior : A
Bioprocess Engineering : A

Accreditation for Master Program is as follows:

Civil Engineering : A
Mechanical Engineering : A
Electrical Engineering : A
Metallurgy and Materials Engineering : A
Architecture : A
Chemical Engineering : A
Industrial Engineering : B

Accreditation for Doctoral Program is as follows:

Civil Engineering : A
Electrical Engineering : A
Metallurgy and Materials Engineering : A
Chemical Engineering : A
Mechanical Engineering : A
Architecture : B

In 2008 & 2010, the Departments of Mechanical Engineering, Civil Engineering, Electrical Engineering, Metallurgy and Materials Engineering, Architecture and Chemical Engineering have been accredited by the Asean University Network (AUN); and also In 2013 Departments of Industrial Engineering have been accredited by the ASEAN University Network (AUN).

International Undergraduate Program (Double-Degree & Single Degree)

Since 1999, Faculty of Engineering has established an international undergraduate program in engineering (double-degree program) with the following renowned Australian higher education institutions: Queensland University of Technology (QUT), Monash University, Curtin University of Technology, The University of Queensland and The University of Sydney. Graduates from this international undergraduate program will be awarded a Bachelor of Engineering degree from our Australian University partner and a Sarjana Teknik degree from Faculty of Engineering UI when they return to FTUI and fulfill certain requirements. The double degree cooperation with QUT involves the study programs Civil Engineering, Mechanical Engineering, Electrical Engineering and Architecture. The double degree cooperation with Monash University involves the study programs

Metallurgy & Material Engineering and Chemical Engineering. The double degree cooperation with Curtin University involves the study programs Chemical Engineering, Architecture, Metallurgy & Material Engineering and Electrical Engineering, with other study programs to follow. The double degree cooperation with the University of Queensland involves the study programs Mechanical Engineering, Electrical Engineering, Chemical Engineering and Metallurgy & Material Engineering. This international undergraduate program provides high quality engineering education in the international level. Since 2011, students will also have a choice to continue their final two years at FTUI as part of the newly opened Single Degree International Program.

Since 2011, students will also have a choice to continue their final two years at FTUI as part of the newly opened Single Degree International Program. The undergraduate international single degree program was launched in 2011 as a result of an increasing demand to provide an international quality education locally. Students in this program are not obligated to continue their last four semester of study at one of our partner universities like their classmates who wishes to pursue a double degree. However, students of single degree program are required to do Study Abroad for a period between one to four semesters at an overseas university. The aims are to widen the international perspective of the students, to have experience to study in an overseas university, to enhance language capability, to enhance cross-cultural adaptability. Study Abroad can be conducted during regular semesters.

Undergraduate Parallel Class Program (Diploma Track) (Extension Program)

The Undergraduate Extension Program in FTUI was initiated in 1993. At the beginning the program was held for only four Study Programs (Civil, Mechanical, Electrical and Metallurgy Engineering). In 1995 the program was also opened for the Chemical Engineering Study Program (Gas and Petrochemical Engineering) followed by Industrial Engineering in 2002. Starting in 2011, the Undergraduate Extension Program of FTUI was cancelled. However, the faculty still give the opportunity for future FTUI students that are graduates from Diploma Program who wishes to continue their study into the FTUI Undergraduate Program. Students are now able to apply through the Undergraduate Parallel Program (Diploma Track) by using the Credit Transferred System. The number of credits acknowledge will be decided by their respective Departments.

The Undergraduate Parallel Program is a full time program where students are expected to be a full time students in campus. This is due to the schedule set for the program which started from the morning period and well into the afternoon. Currently there are six Study Programs available to choose from: Civil Engineering, Mechanical Engineering, Electrical Engineering, Metallurgy & Material Engineering, Chemical Engineering, Industrial Engineering.

1.5.1. DEPARTMENT OF CIVIL ENGINEERING

GENERAL

The Civil Engineering Department previously known as Civil Engineering Study Program was established together with the Faculty of Engineering Universitas Indonesia (FTUI) at 17 July 1964. In the initial stage of development, Civil Engineering Department – FTUI offered one study program, Civil Engineering, with two majors, structural engineering and water resources engineering. Following the demand and development of science and technology, it was then expanded with four additional majors, i.e. transportation engineering, geotechnical engineering, sanitary engineering and construction management. With the improvement of human resources and facilities, Postgraduate Program for master degree (S2) and doctoral Degree (S3) were established in 1992 and 2001, respectively. In 2006, the Department established the undergraduate program on Environmental Engineering. Previously, Environmental Engineering is one of the majors in Civil Engineering. There are eight specializations for Master and Doctoral Program in Civil Engineering, structural engineering, geotechnical engineering, water resources management, transportation system & engineering, construction management, environmental engineering, project management and infrastructure management.

To ensure the quality, the Department is regularly accredited by the national accreditation board, BAN-PT (Badan Akreditasi Nasional Pendidikan Tinggi) since 1998. All study programs of Civil Engineering, undergraduate, master and doctor reach the highest grade of "A". The Environmental Engineering Study Program of was nationally accredited in 2010. The under graduate program of Civil Engineering was accredited internationally in 2001 by The Joint Board of Moderators of the Engineering Council consisting of Institution of Structural Engineers (ISE), Institution of Civil Engineers (ICE), and Chartered Institution of Building Service Engineers of the United Kingdom. However, due to changes in their policy, reaccreditation was discontinued. In 2008, undergraduate program of Civil Engineering was assessed by ASEAN University Network – Quality Assurance Program (AUN-QA). In order to maintain the quality in education, AUN-QA reassessment was conducted in 2015.

Civil Engineering is the oldest engineering discipline and encompasses many specialties. Civil engineering can be described as the application of engineering to civil society. It applies the principles of engineering to meet society's fundamental needs for housing, transportation, sanitation, and the other necessities of a modern society. The engineers deal with the design, construction, and maintenance of the physical and naturally built environment, including works like roads, bridges, canals, dams, and buildings, as well as other challenges such as deteriorating infrastructures, complex environmental issues, outdated transportation systems, and natural disasters. Civil engineering education is to prepare students to be master planners, designers, constructors, and managers of various civil engineering works. The graduates can work in all levels: in the public sector from municipal through to national governments, and in the private sector from individual homeowners through to international companies.

Environmental engineering is defined as branch of engineering concerned with the application of scientific and engineering principles for protection of human populations from the effects of adverse environmental factors; protection of environments both local and global from the potentially deleterious effects of natural and human activities; and improvement of environmental quality. Tasks of environmental engineers include evaluation of environmental quality of water, air and soils by developing strategies and methods, design of facilities or programs, evaluation of results and assessment of the economics and efficiency of processes. The Environmental Engineering Study Program provide graduates with professional and competence in planning, designing, constructing and managing environmental infrastructure for: drinking water treatment, liquid and solid waste management, drainage, environmental sanitation, water resources, air pollution, pollution prevention & environmental impact assessment.

Corresponding Address

Departemen Teknik Sipil
Fakultas Teknik Universitas Indonesia
Kampus UI Depok 16424, Indonesia
Telp: +62-21-7270029
Fax: +62-21-7270028
Email: sipil@eng.ui.ac.id
http ://www.eng.ui.ac.id/sipil

VISION and MISSIONS

VISION

"To become a center of knowledge and technology in Civil Engineering and Environmental Engineering and to play an important role in global market"

MISSIONS

- To produce graduates who have a mastery of fundamental knowledge and meet the international standard and have environmental conscious.
- To contribute to betterment of society through quality research and professional community services in civil engineering & environmental engineering with sustainability considerations.
- To prepare graduates for leadership roles, having effective communication skills and professional ethics.

STAFFS OF THE DEPARTMENT OF CIVIL ENGINEERING

Head of Department:
Prof. Ir. Widjojo Adi Prakoso, M.Sc., Ph.D
Vice Head of Department:
Mulia Orientilize, ST, MEng
Head of Civil Engineering Study Program:
Prof. Ir. Widjojo Adi Prakoso, M.Sc., Ph.D
Head of Environmental Engineering Study Program:
Dr. Ir. Setyo Sarwanto Moersidik, DEA

Head of Laboratory

Head of Structure and Materials Laboratory:
Dr. Ir. Elly Tjahjono S, DEA
Head of Soil Mechanics Laboratory:
Erly Bahsan, ST, Mkomp
Head of Hydraulics, Hydrology and River Laboratory:
Ir. Siti Murniningsih, MS
Head of Transportation Laboratory:
Dr. Ir. Tri Tjahjono
Head of Mapping and Surveying Laboratory:
Ir. Alan Marino, MSc
Head of Sanitation & Environment Laboratory:
Ir. Gabriel S. Boedi Andari, M.Eng., Ph.D

BOARD OF PROFESSORS

Prof. Dr. Ir. Budi Susilo Soepandji, DEA, budisus@eng.ui.ac.id (Ir, UI; DEA, Dr, Ecole Centrale Paris; Prof, UI) Geotechnic

Prof. Dr. Ir.Tommy Ilyas, M.Eng., t.ilyas@eng.ui.ac.id (Ir, UI; M.Eng, Sheffield University; Dr, UI; Prof. UI) Geotechnic

Prof. Dr. Ir. Irwan Katili, DEA, irwan.katili@gmail.com (Ir, UI; DEA, Dr, Universite Technique de Compiegne; Prof. UI) Structure

Prof. Dr. Ir. Sutanto Soehodho, M.Eng., tanto@eng.ui.ac.id (Ir, UI, M.Eng, Dr, Tokyo University; Prof. UI) Transportation

Prof. Dr. Ir. Yusuf Latief, MT., latief73@eng.ui.ac.id (Ir, UI; MT, Dr, UI; Prof. UI) Project Management

Prof. Dr. Ir. Djoko M. Hartono, SE., M.Eng., djokomh@eng.ui.ac.id (Ir, ITB; M.Eng, Asian Institute of Technology; Dr, UI; Prof, UI) Environmental

Prof. Dr. Ir. Sigit Pranowo Hadiwardoyo, DEA., sigit@eng.ui.ac.id (Ir, UI; DEA, Ecole Centrale de Lyon; Dr, Ecole Centrale Paris; Prof. UI) Transportation

Prof. Ir. Widjojo Adi Prakoso, M.Sc., PhD. wprakoso@eng.ui.ac.id (Ir, UI; MSc, PhD, Cornell University; Prof. UI) Geotechnic

FULL-TIME FACULTY

Alan Marino, alanmarino@eng.ui.ac.id (Ir, UI; M.Sc., Wisconsin Madison Univ., USA) Transportation

Alvinsyah, alvinsyah_2004@yahoo.com (Ir, UI; M.S.E., University of Michigan, Ann Arbor, USA) Transportation

Andyka Kusuma, andyka.k@eng.ui.ac.id (ST, UI; MSc, Kungliga Tekniska Hogskolan, Swedia; PhD, University of Leeds) Transportation

Ayomi Dita Rarasati, ayomi@eng.ui.ac.id (ST, MT, UI; Ph.D, QUT Australia) Construction Management; Project Management

Budi Susilo Soepandji, budisus@eng.ui.ac.id (Ir, UI; DEA, Dr, Ecole Centrale Paris; Prof, UI) Geotechnic

Cindy Rianti Priadi, cindy.priadi@eng.ui.ac.id (ST, ITB; MSc, University Paris-7-Paris12-ENPC; Dr, Univ. Paris Sud, 2010) Environmental

Djoko M. Hartono, djokomh@eng.ui.ac.id (Ir, ITB; M.Eng, Asian Institute of Technology; Dr, UI; Prof, UI) Environmental

Dwita Sutjiningsih, dwita@eng.ui.ac.id (Ir, UI; Dipl.HE, Institute of Hydraulics Engineering (IHE); Dr.-Ing, Institut fur Wasserwirtshaft, Univ. Hannover) Water Resources Management

El Khobar Muhaemin Nazech, elkhobar@eng.ui.ac.id (Ir, UI; M. Eng, Asian Institute of Technology) Environmental

Ellen SW Tangkudung, ellen@eng.ui.ac.id (Ir, UI; M.Sc, ITB) Transportation

Elly Tjahjono, elly@eng.ui.ac.id (Ir, UI; DEA, Insa de Lyon, Perancis; Dr, UI) Structure

Erly Bahsan, erlybahsan@eng.ui.ac.id (ST, M.Kom, UI; Kandidat Dr, NTUST) Geotechnic

Firdaus Ali, firdaus108@hotmail.com (Ir, ITB; MSc, PhD, University of Wisconsin) Environmental

Gabriel Sudarmini Boedi Andari, andari@eng.ui.ac.id (Ir, ITB; M.Eng, RMIT; PhD, Texas Southern University) Environmental

Henki Wibowo Ashadi, henki@eng.ui.ac.id (Ir, UI; Technische Hochschehule Darmstadt; Dr-Ing, TH Darmstadt) Structure

Herr Soeryantono, herr@eng.ui.ac.id (Ir, UI; MSc, PhD, Michigan State University) Water Resources Management

Heru Purnomo, herupur@eng.ui.ac.id (Ir, UI; DEA, Universite' Blaise Pascal; Dr, Universite'd"Orle'ans) Structure

Irma Gusniani, irma@eng.ui.ac.id (Ir, ITB; MSc, University of Colorado) Environmental

Irwan Katili, irwan.katili@gmail.com (Ir, UI; DEA, Dr, Universite Technique de Compiegne; Prof. UI) Structure

Jessica Sjah, jessicasjah@eng.ui.ac.id (ST, UI; MT, UI; MSc, Ecole Centrale de Lyon; Dr, Ecole Centrale de Lyon) Structure

Josia Irwan Rastandi, jrastandi@eng.ui.ac.id (ST, MT, UI; Dr-Ing, Technische Universtat Munchen) Structure

Leni Sagita, lsagita@eng.ui.ac.id (ST, MT, UI; Ph.D., NUS, Singapore) Construction Management: Project Management

Martha Leni Siregar, leni@eng.ui.ac.id (Ir, UI; MSc, Univ.of Southampton) Transportation
Mohammed Ali Berawi, maberawi@eng.ui.ac.id (ST, Unsri; M.Eng.Sc, University of Malaya; PhD, Oxford Brookes University) Construction Management: Project Management
Mulia Orientilize, mulia@eng.ui.ac.id (ST, UI; M.Eng, Nanyang Technological University) Structure
Nahry, nahry@eng.ui.ac.id (Ir, MT, Dr, UI) Transportation
Nyoman Suwartha, nsuwartha@eng.ui.ac.id (ST, MT, UGM; M.Agr, Dr, Hokkaido University) Environmental
R. Jachrizal Soemabrata, rjs@eng.ui.ac.id (Ir, UI; MSc, Leeds Univ; Dr, Melbourne University) Sustainable Urban Transport
RR. Dwinanti Rika Marthanty, dwinanti@eng.ui.ac.id (ST, MT, UI; Dr, UI, Université Lille 1) Water Resources Management
Setyo Sarwanto Moersidik, ssarwanto@eng.ui.ac.id (Ir, ITB; DEA, Dr, Universite'de Montpellier II) Environmental
Sigit Pranowo Hadiwardoyo, sigit@eng.ui.ac.id (Ir, UI; DEA, Ecole Centrale de Lyon; Dr, Ecole Centrale Paris; Prof. UI) Transportation
Siti Murniningsih, titik_winarno@yahoo.com (Ir, Undip; MS, ITB) Water Resources Management
Sutanto Soehodho, tanto@eng.ui.ac.id (Ir, UI, M.Eng, Dr, Tokyo University; Prof. UI) Transportation
Toha Saleh, toha@eng.ui.ac.id (ST, UI; MSc, University of Surrey) Water Resources Management
Tommy Ilyas, t.ilyas@eng.ui.ac.id (Ir, UI; M.Eng, Sheffield University; Dr, UI; Prof. UI) Geotechnic
Tri Tjahjono, tjahjono@eng.ui.ac.id (Ir, UI; MSc, Ph.D, Leeds University) Transportation
Widjojo Adi Prakoso, wprakoso@eng.ui.ac.id (Ir, UI; MSc, PhD, Cornell University) Geotechnic
Wiwik Rahayu, wrahayu@eng.ui.ac.id (Ir, UI; DEA, Dr, Ecole Centrale de Paris) Geotechnic
Yuskar Lase, yuskar@eng.ui.ac.id (Ir, UI; DEA, Dr, Ecole Centrale de Lyon) Structure
Yusuf Latief, latief73@eng.ui.ac.id (Ir, UI; MT, Dr, UI; Prof. UI) Project Management

PART-TIME FACULTY

Prof. Ir. Suyono Dikun, M.Sc., Ph.D, suyonodikun@gmail.com (Ir, UI; MSc, PhD, University of Wisconsin; Prof.UI) Infrastructure Management
Ir. Sjahril A. Rahim, M.Eng, syahril@eng.ui.ac.id (Ir, UI; M.Eng, Asian Institute of Technology) Structure
Dr. Ir. Damrizal Damoerin, damrizal@eng.ui.ac.id (Ir,UI; MSc, ITB; Dr, UI) Geotechnic
Ir. Essy Ariyuni, PhD, essy@eng.ui.ac.id (Ir, ITS; MSc, University of Wisconsin; Dr, Quensland University of Technology) Structure
Ir. Iwan Renadi Soedigdo,PhD, irs1210@yahoo.com (Ir, UI; MSCE, The George Washington University; Ph.D, Texas A&M University) Structure
Ir. Heddy Rohandi Agah,M.Eng, agah@eng.ui.ac.id (Ir, UI; M.Eng, Asian Institute of Technology) Transportation
Ir. Madsuri,MT, madsuri@eng.ui.ac.id (Ir, MT, UI) Structure
Ir. Setyo Supriyadi, M.Si, setyosuprijadi@yahoo.com (Ir, Msi, UI) Structure

1.5.2. DEPARTMENT OF MECHANICAL ENGINEERING

GENERAL

The Department of Mechanical Engineering, previously known as Mechanical Engineering Study Program. The department was established together with the launch of the faculty of engineering Universitas Indonesia in November 27, 1964 at Salemba, Jakarta. Nowadays there are 2 study programs within the department, which are: Mechanical Engineering Study Program and Marine Engineering Study Program. The mechanical engineering study program provides the knowledge which focused into Energy Conversion, Product Design, Manufacturing Process and also the basic of Industrial operational and managerial. The Marine Engineering study program provide the education which focused into Ship design, Ship manufacturing process, ship maintenance, ship machinery installation and also the rules and laws of marine. The graduates of the mechanical engineering have worked in several areas such as automotive industry, oil and gas industry, heavy duty engine, educational institution, research institution and other industries. The department of mechanical engineering organized several programs, which are: Bachelor Degree (Regular, Parallel, and International class) Master Degree and Doctoral Degree. Since August 2007, the department of mechanical engineering received the ISO 9001: 2000 for quality management system in Mechanical Engineering Study Program. In 2011, The Department of Mechanical Engineering once again received the ISO 9001: 1008 for quality management system. Certification by international agencies is one of management's commitments in quality management, to ensure and enhance academic quality and stakeholder satisfaction. The mechanical engineering study program also received the highest academic accreditation point according to the National Accreditation Board in 2005. In 2008, the Department of Mechanical Engineering has also gained international recognition in the form of accreditation of the ASEAN University Network (AUN).This again shows the commitment the Department of Mechanical Engineering to develop international education and excel in their fields, as stated by the firm through the vision, mission and goals.

Developing nations are very dependent of human resource development. Resource is people who set the direction, goals, implement and develop the nation's life. With good human resources are expected to achieve the life of prosperous and affluent nations. Therefore, the developments of human resources become the key of national development. Higher education in Indonesia is part of the National Education System which aims to develop the intellectual life of the nation through the development of human resources to carry out three main activities of the so-called "Tridharma Universities", namely :

1. Hold a higher level education
2. Conduct the scientific research
3. Perform the Community service

In order to develop human resources for the life of the nation, the Department of Mechanical Engineering has set a goal of three main activities is to be a reference to any academic activity. In education, has a goal to produce graduates who are able to analyze and synthesize the characteristics of mechanical systems, designing and planning systems and mechanical equipment as well as managing the production installation, and be able to analyze and solve any scientific problem, work together in teams, and develop themselves and their knowledge, with a lofty intellectual attitude, pattern of systematic thinking, logical and integrated. In the field of research, Department of Mechanical Engineering has a goal to contribute and play a role in the development of mechanical science and technology and a continuous intake of the educational process. While the field of devotion and service to the community, aims to provide ideas and direct involvement in quality improvement and enhancement of community and industry.

To answer the demand of graduate academic programs that have the character of leadership and excellence in academic and professionalism in the field of Mechanical Engineering, both at the level of Bachelor, Master, or PhD, the Department of Mechanical Engineering, developed the design of competency-based academic curriculum is implemented through the student centered teaching

activity(student centered learning). According to the degree, in the curriculum design the research activity become the major aspect in the Doctoral Degree.

In the 2012 curriculum design, the integration of the design between bachelor degree, master degree and doctoral degree curriculum has been pursued, so it is possible for a student with an excellent academic record to take courses from a higher degree (Master and Doctoral) by using the credit transfer regulation through the Fast Track Program.

A more detailed explanation of each of the courses organized by The Mechanical Engineering and Marine Engineering Study Program, the description of the main academic competence, and other supporters of the graduates of each program of study, are given in the following section.

Contact

Department of Mechanical Engineering
Universitas Indonesia
Kampus UI, Depok, 16424.
Tel. +62 21 7270032
Fax +62 21 7270033
e-mail : mesin@eng.ui.ac.id
http ://mech.eng.ui.ac.id

VISION and MISSION

Vision

"Become the center of the excellent research and education service in Mechanical Engineering"

Mission

"To conduct research and research-based education for the development of science and technology in the field of mechanical engineering, and to conduct research and education and use it to improve the quality of life and humanity"

Head of Department :
Dr.-Ing. Ir. Nasruddin, M.Eng
Vice Head of Department:
Dr. Ario Sunar Baskoro, ST., MT., M.Eng
Head of Mechanical Engineering Study Program:
Dr-Ing.Ir. Nasruddin, MEng
Head of Naval Architecture and Marine Engineering Study Program:
Dr. Agus S. Pamitran, ST, MEng
Assistant to Vice Head for Academic Affairs:
Dr.Eng. Radon Dhelika, B.Eng, M.Eng
Assistant to Vice Head for Non-Academic Affairs:
Dr. Agung Shamsuddin Saragih, S.T, MS.Eng
Cooperation Relationship Coordinator:
Dr. Yudan Whulanza, ST., MSc.
Venture Coordinator / Director of P2M:
Ardiyansyah, S.T, M.Eng, PhD

Head of Laboratory

Head of Mechanical and Biomechanic Design Laboratory :
Dr. Ir. Wahyu Nirbito, MSME.
Head of Mechanical Technology Laboratory:
Prof. Dr. Ir. Danardono A.S., DEA, PE

Head of Thermodynamics Laboratory:
Prof. Dr. Ir. Yulianto S. Nugroho, MSc, PhD.
Head of Heat Transfer Laboratory:
Dr. Ir. Engkos A. Kosasih, MT
Head of Fluid Mechanics Laboratory:
Dr. Ir. Warjito, M.Eng.
Head of Manufacture and Otomatization Laboratory:
Dr. Ario Sunar Baskoro, ST., MT., M.Eng
Head of Air-conditioning Engineering Laboratory:
Prof. Dr. Ir. M. Idrus Alhamid
Head of Ship Design Laboratory:
Prof. Dr. Ir. Yanuar, M.Eng. MSc.

Head of Research Cluster- Kelompok Ilmu (KI)
Head of KI. Energy Conversion:
Prof. Dr. Ir. M. Idrus Alhamid
Head of KI. Design, Manufacture and Automation:
Dr. Ir. Gandjar Kiswanto, M.Eng.
Head of KI. Naval Architecture and Marine Engineering:
Dr. Agus S. Pamitran, ST, M.Eng

BOARD OF PROFESSOR

Prof. Dr. Ir. Bambang Sugiarto, M.Eng
bangsugi@eng.ui.ac.id (Ir, UI, 1985; M.Eng, Hokkaido Univ., Japan, 1991; Dr. Eng, Hokkaido Univ., Japan, 1994) *Combustion Engine*
Prof. Dr. Ir. Budiarso, M.Eng
mftbd@eng.ui.ac.id (Ir. UI, 1977; M.Eng. NUS, 1996, Dr. UI, 2005) *Fluid Mechanics, Energy System*
Prof. Dr . Ir. I Made Kartika Dhiputra, Dipl-Ing
dhiputra_made@yahoo.com (Ir. UI, 1977; Dipl.-ing Karlsruhe University, 1983; Dr. Universitas Indonesia, 1988) *Thermodynamics*
Prof. Dr. Ir. Raldi Artono, DEA
koestoer@eng.ui.ac.id (Ir. UI, 1978; DEA Univ.de Poitier, 1980; Dr, Univ. Paris XII France, 1984) *Heat Transfer*
Prof. Dr. Ir. Tresna P. Soemardi
tresdi@eng.ui.ac.id (SE. UI, 1987; Ir., ITB, 1980; MSi, UI, 1985; Dr. Ecole Centrale de Paris France, 1990) *Product Design, Composite*
Prof. Dr-Eng. Ir. Yanuar, M.Eng., MSc
yanuar@eng.ui.ac.id (Ir. UI, 1986; M.Eng. Hiroshima Univ. Jepang, 1992; MSc, Tokyo Metropolitan Univ. 1996; Dr.Eng., Tokyo Metropolitan Univ. Japan, 1998) *Fluid Mechanics, Ship Resistance and Propulsion*
Prof. Dr. Ir. Yulianto S. Nugroho, M.Sc
yulianto@eng.ui.ac.id (Ir. UI, 1992; MSc, Leeds Univ., UK, 1995; Ph.D., Leeds Univ., UK, 2000) *Fire Safety Engineering*
Prof. Dr.-Ing Nandy S. Putra
nandyputra@eng.ui.ac.id (Ir. UI, 1994, Dr-Ing., Hamburg Bundeswehr Univ, Germany, 2002) *Heat Transfer, Energy Conversion, Rekayasa Termofluida, Statistik Teknik*
Prof. Dr. Ir. Harinaldi, M.Eng
harinald@eng.ui.ac.id (Ir. UI, 1992; M.Eng, Keio Univ. Japan, 1997; Dr.Eng, Keio Univ. Japan, 2001) Thermofluids,Reacted System Fluid Dynamics, Statistics
Prof. Dr. Ir. R. Danardono Agus S., DEA
danardon@eng.ui.ac.id (Ir. UI, 1984; DEA, Ecole Centrale de Lyon 1989; Dr. Univ. d'Orleans France, 1993) *Engineering Drawing, Automotive Engineering*
Prof. Dr. Ir. M. Idrus Alhamid
mamak@eng.ui.ac.id (Ir. UI, 1978; Dr., K.U. Leuven Belgium, 1988) *Drying Engineering, Energy Conversion*
Prof. Dr. Ir. Adi Suryosatyo, M.Eng

adisur@eng.ui.ac.id (Ir. UI, 1996; M.Eng., UTM-Malaysia 1999; Dr., UTM-Malaysia, 2002) *Gasification, Power Generation, Wind Power*

INTERNATIONAL ADJUNCT PROFESSOR

Prof. Dr. Tae Jo Ko
tjko@yu.ac.kr (BSc. Pusan National University; MSc. Pusan National University; Ph.D Pohang Institute of Technology) Micromachining, Nontraditional Manufacturing, Machine Tools

Prof. Dr. Keizo Watanabe
keizo@tmu.ac.jp (MSc. Tokyo Metropolitan University, 1970; Dr-Eng. Tokyo Metropolitan University, 1977) Drag Reduction, Fluid Mechanics

FULL-TIME FACULTY

Agung Shamsuddin
ashamsuddin@eng.ui.ac.id (ST. UI, 2004; MSEng. Yeungnam Univ., 2007; Ph.D - Yeungnam Univ., 2015) Microfabrication, Manufacturing Engineerinng

Agus Sunjarianto Pamitran
pamitran@eng.ui.ac.id (ST. UI, 1999; M.Eng. Chonnam University, 2004; Dr. Chonnam University, 2009) Multiphase Flow, Refrigeration

Ahmad Indra Siswantara
a_indra@eng.ui.ac.id (Ir. UI, 1991; Ph.D, UTM - Malaysia, 1997) Computational Fluid Dynamics (CFD), Fluid Mechanics

Ardiyansyah
ardiyansyah@eng.ui.ac.id (ST. UI, 2002; MEng. Chonaam Univ. 2007; Ph.D, Oklahoma State Univ, USA, 2015) Heat Transfer, Refrigeration

Ario Sunar Baskoro
ario@eng.ui.ac.id (ST. UI, 1998; MT. UI 2004; MEng – Keio University 2006; Dr., Keio Univ, 2009) Welding Engineering, Robotics, Mechatronics

Engkos Achmad Kosasih
kosri@eng.ui.ac.id (Ir. UI, 1991; MT. ITB, 1996; Dr. UI, 2006) Heat Transfer, Drying Engineering, Numerical Method, Control Engineering

Gandjar Kiswanto
gandjar_kiswanto@eng.ui.ac.id (Ir. UI, 1995; M.Eng, KU Leuven Belgium, 1998; Dr., KU Leuven Belgium, 2003) Intelligent Manufacturing System, Automation, Robotics, Advanced CAD/CAM, Multi-axis Machining

Gatot Prayogo
gatot@eng.ui.ac.id (Ir. FTUI, 1984; M.Eng Toyohashi Univ. of Technology-Japan, 1992; Dr. UI, 2011) Fracture Mechanics, Strength of Materials

Gerry Liston Putra
gerry@eng.ui.ac.id (ST. UI, 2011; MT. UI, 2013) Ship Material

Gunawan
gunawan_kapal@eng.ui.ac.id (ST.UI, 2010; MT.UI, 2012; Cand. Doctor – Hiroshima Univ. Japan), Ship Machinery, Resistance and Propulsion System

Hadi Tresno Wibowo
hadi.tresno@yahoo.com (Ir, UI, 1982; MT, UI, 2010) Ship Structure, Machining Process

Hendri Dwi Saptioratri Budiono
hendri@eng.ui.ac.id (Ir. UI, 1985; M.Eng, Keio Univ. Japan, 1992; Dr. UI, 2014) Mechanical Design, Design for Manufacture and Assembly

Henky Suskito Nugroho
gagah@eng.ui.ac.id (Ir. UI, 1987; MT. UI; Dr. UI, 2014) Manufacturing System Design, Manufacturing Performance Assessment & Improvement

Imansyah Ibnu Hakim
imansyah@eng.ui.ac.id (Ir. UI, 1993; M.Eng. Kyushu Univ., 2000; Dr. UI, 2012) Heat Transfer, Energy Conversion

Jos Istiyanto
josist@eng.ui.ac.id (ST. UI, 1998; MT. UI, 2004; Dr. Yeungnam Univ, 2012) CAD/CAM, STEP-NC, Microfabrication

Mohammad Adhitya
madhitya@eng.ui.ac.id (ST. UI, 2000; MSc FH Offenburg, 2004; Cand. Doctor - Technische Universität Braunschweig) Dynamic, Otomotive System

Marcus Alberth Talahatu
marcus@eng.ui.ac.id (Ir. Unhas, 1982; MT. UI, 2003; Dr. UI, 2013) Shipbuiding Design, Engineering Drawing

Nasruddin
nasruddin@eng.ui.ac.id (ST, UI, 1995; M.Eng, KU Leuven Belgium, 1998; Dr.-Ing, RWTH-Aachen, 2005) Refrigeration Engineering, Energy Conversion, Energy System Optimization

Radon Dhelika
radon@eng.ui.ac.id (B.Eng. Nanyang Tech. Univ., 2008; M.Eng. Tokyo Inst. of Tech., 2012; Dr.Eng. Tokyo Inst. of Tech., 2015) Electrostatics, Electromechanical System

Sugeng Supriadi
sugeng@eng.ui.ac.id (ST. UI, 2004; MSEng, Yeungnam Univ. 2007; Dr - Tokyo Metropolitan Univ, 2012) Microfabrication, Fabrication Process Control, Engineering Materials

Sunaryo
naryo@eng.ui.ac.id (Ir. UI, 1981; Dr., Strathclyde Univ. Scotland, 1992) Shipyard Production, Shipbuilding Technology

Wahyu Nirbito
bito@eng.ui.ac.id (Ir. UI, 1982; MSME, Univ. of Minessota USA, 1987; Dr. UI, 2011) Vibration Engineering, Gas Turbine, Condition Monitoring

Warjito
warjito@eng.ui.ac.id (Ir. UI, 1988; MEng, Hokkaido Univ., 1999; Dr. Eng, Hokkaido Univ., 2002) Fluid Mechanics, Piping System, Maintenance Engineering

Yudan Whulanza
yudan@eng.ui.ac.id (ST. 2000; MSc. FH-Aachen, 2005; Dr. Univ. Pisa, 2011) Microfabrication

PART-TIME (NON-TENURED) FACULTY

Prof. Dr. Ir. Bambang Suryawan
suryawan@eng.ui.ac.id (Ir. UI, 1972; MT. UI, 1994; Dr., UI, 2004) Thermofluid

Agung Subagio
agsub@eng.ui.ac.id (Ir. UI, 1977; Dipl.Ing. Karlsruhe- Germany,1981) Power Generation

Budihardjo
budihardjo@eng.ui.ac.id (Ir. UI, 1977; Dipl.Ing. Karlsruhe, 1981; Dr., UI, 1998) Refrigeration Engineering, Air Dryer, Thermo Dynamics

Firman Ady Nugroho
firman_ady@eng.ui.ac.id (ST, UI, 2011; MT, UI, 2012; Dr. Kyushu University, 2016) Ship Construction, Ship Material

Muhammad Agung Santoso
agung_santoso@eng.ui.ac.id (ST, UI, 2012; MT, UI, 2013; Cand. Doctor – Imperial College UK) Fire Modeling

Muhammad Arif Budiyanto
arif@eng.ui.ac.id (ST, UI, 2011; MT, UI, 2012; Dr., Kyushu University, 2016) Energy Management for Maritime Industry

Ridho Irwansyah
ridho@eng.ui.ac.id (ST.UI, 2010; MT.UI, 2012; Cand Dr. - Universität der Bundeswehr München) Heat Transfer Engineering, Non-intrusive Temperature and Flow Measurement

Rusdy Malin
rusdi@eng.ui.ac.id (Ir. UI, 1980; MME, UTM Malaysia,1995) Building Mechanical System, Ventilation System

Tris Budiono M
tribuma@eng.ui.ac.id (Ir. UI, 1980; MSi, UI, 1996) Engineering Drawing, Engineering Materials

1.5.2. DEPARTMENT OF ELECTRICAL ENGINEERING

GENERAL

The Department of Electrical Engineering, Faculty of Engineering, Universitas Indonesia was established at the same time with the establishment of Faculty of Engineering on July 17th, 1964. Even though the classes had been started since October 17th, 1964. At the beginning of the establishment, the Department of Electrical Engineering was named as "Jurusan Listrik" consisted of two fields of studies: Electrical Power and Electronics & Telecommunication. Since 1984, "Jurusan Listrik" has been changed to "Jurusan Elektro", which has been named again as The Department of Electrical Engineering in 2004. Initially there are five streams available in this department, namely: (1) Electrical Power Engineering, (2) Electronics Engineering, (3) Telecommunication Engineering, (4) Control Engineering, (5) Computer Engineering. Since 2006, computer engineering stream became a new study program: Computer Engineering Study Program (CESP) in the Department. In 2016, a new stream namely Biomedical Engineering is officially established.

THE OBJECTIVE OF EDUCATION

The objective of the Electrical Engineering education is to produce graduate who is able to propose solutions to electrical engineering related problems based on professional ethics.

VISION AND MISSION

The department has the vision to become a high standard of excellence in education and research in the field of electrical engineering. In order to achieve such vision, the department has defined its mission to produce Electrical Engineering graduates who are able to compete beyond the national labor market. The graduates will be capable to respond to the vast growing engineering technology development though the support of excellent educational process, excellent management and organization, international standard of competence of the teaching staff and international reputation in specific research activities.

THE TARGETS

Bachelor of Electrical Engineering

1. Able to design of the hardware.
2. Able to design of the software.
3. Able to handle general issues and specific in electrical engineering.
4. Able to apply the basic principles of mathematics, physics, and statistics in solving electrical engineering.
5. Capable of critical thinking, creative, and innovative and have the intellectual curiosity to solve problems at the level of the individual and the group.
6. Able to identify varieties of entrepreneurial efforts that are characterized by innovation and self-reliance based on ethics.
7. Able to use the language both spoken and written in the Bahasa Indonesia and English for academic or non-academic activities.
8. Able to provide alternative solutions to problems that arise in the environment, society, nation, and country.
9. Able to utilize information communication technology (ICT).

Bachelor of Computer Engineering

1. Able to design system, component, and process based on needs in a variety of areas of life.
2. Able to design information networks.
3. Able to design a computer-based system.
4. Able to make algorithm and implement it into programming.
5. Able to apply the basic principles of mathematics, physics, and statistics in solving computer engineering.
6. Able to use the language both spoken and written in the Bahasa Indonesia and English for

academic or non-academic activities.
7. Have integrity and are capable of critical thinking, creative, and innovative and have the intellectual curiosity to solve problems at the level of the individual and the group.
8. Able to utilize information technology communication.
9. Able to provide alternative solutions to problems that arise in the environment, society, nation, and country.
10. Able to identify varieties of entrepreneurial efforts that are characterized by innovation and self-reliance based on ethics.

Master of Electrical Engineering

1. Able to model electrical engineering system into mathematical equations
2. Able to formulate the problem solving in electrical engineering with the proper research methods
3. Able to produce innovative independent scientific work
4. Able to apply concepts of professional management in the field of electrical engineering

ELECTRICAL ENGINEERING STAFFS

Head of Department:
Ir. Gunawan Wibisono, M.Sc., Ph.D

Head of Electrical Engineering Study Program
Ir. Gunawan Wibisono, M.Sc., Ph.D

Head of Computer Engineering Study Program
Dr. Muhammad Salman, ST., MIT.

Vice Head of Department:
Dr.Eng. Arief Udhiarto, S.T., M.T.

HEAD OF LABORATORY

Head of High Voltage and Electrical Measurement Laboratory:
Ir. Amien Rahardjo, MT.

Head of Electrical Power Conversion Laboratory:
Ir. I Made Ardita, MT.

Head of Electrical Power System Laboratory:
Prof. Dr. Ir. Iwa Garniwa M. K., M.T.

Head of Electronics Laboratory:
Dr. Agus Santoso Tamsir, MT

Head of Control Laboratory:
Dr. Ir. Feri Yusivar, M.Eng.

Head of Digital Laboratory:
Prima Dewi Purnamasari, ST., MT., M.Sc.

Head of Telecommunication Laboratory:
Dr. Fitri Yuli Zulkifli, M.Sc

Head of Optoelectronics Laboratory:
Dr. Ir. Retno Wigajatri, MT.

Head of Computer Networks Laboratory:
Dr. Muhammad Salman, ST., MIT.

MAILING ADDRESS

Departemen Teknik Elektro FTUI
Kampus Baru UI, Depok 16424.
Tel. (021) 7270078
Fax. (021) 7270077
e-mail: elektro@ee.ui.ac.id
http://www.ee.ui.ac.id

BOARD OF PROFESSORS

Prof. Dr. Ir. Harry Sudibyo S., harisudi@ee.ui.ac.id (Ir., Universitas Indonesia, 1979; DEA., Univ. Paris VI, 1984; Dr. Ing., Univ. Paris VI, France, 1987; Prof., UI, 2007) Microelectronics & VLSI design.

Prof. Ir. Rinaldy Dalimi, M.Sc, Ph.D., rinaldy@ee.ui.ac.id (Ir., Universitas Indonesia, 1980; M.Sc., Michigan State Univ., USA, 1989; Ph.D., Virginia Tech., USA, 1992; Prof., UI, 2007) Electrical power system analysis, energy management.

Prof. Dr. Ir. Eko Tjipto Rahardjo, eko@ee.ui.ac.id (Ir., Universitas Indonesia, 1981; M.Sc., University of Hawaii, USA, 1989; Ph.D, Saitama University, Japan, 1996; Prof., UI, 2005) Electromagnetic, antenna and wave propagation, microwave.

Prof. Dr. Benyamin Kusumoputro, M.Eng. kusumo@ee.ui.ac.id (Drs., Fisika ITB, 1981; M.Eng., Tokyo Inst. Tech., Japan, 1984; Dr., Tokyo Inst. Tech., Japan, 1993; Prof., UI, 2004) Computation intelligence, robotics.

Prof. Dr. Ir. Rudy Setiabudy, DEA, rudy@ee.ui.ac.id (Ir., Universitas Indonesia, 1982; DEA, INPG Grenoble, France, 1987; Dr., Montpellier II USTL, France, 1991; Prof., UI, 2008) Electrical material technology, electrical measurement.

Prof. Dr. Ir. Dadang Gunawan, guna@ee.ui.ac.id (Ir., Universitas Indonesia, 1983; M.Eng., Keio University, Japan, 1989; Ph.D., Tasmania University, Australia, 1995; Prof., UI, 2004) Signal processing and compression, multimedia communication.

Prof. Dr. Ir. NR. Poespawati, MT., pupu@ee.ui.ac.id (Ir., Universitas Indonesia, 1985, MT., Universitas Indonesia, 1997, Dr., Elektro FTUI, 2004; Prof., UI, 2008) Solar cell devices, laser.

Prof. Dr. Ir. Iwa Garniwa MK, MT., iwa@ee.ui.ac.id (Ir., Universitas Indonesia, 1987; MT., Universitas Indonesia, 1998; Dr., Elektro FTUI, 2003; Prof. , UI, 2009) High voltage and current, electrical materials.

Prof. Dr.-Ing. Kalamullah Ramli, M.Eng., k.ramli@ee.ui.ac.id (Ir., Universitas Indonesia, 1993; M.Eng., Univ. of Wollongong, Australia, 1997; Dr.-Ing, Univ. Duisburg-Essen, Germany, 2003, Prof., UI, 2009) Embedded systems.

Prof. Dr. Ir. Riri Fitri Sari, M.Sc., MM., riri@ee.ui.ac.id (ST., Universitas Indonesia, 1994; M.Sc., Sheffield, 1998; PhD., Leeds Univ., UK, 2004, Prof., UI, 2009) Software engineering, active networks, pervasive computing.

INTERNATIONAL ADJUNCT PROFESSORS

Prof. Dr. Fumihiko Nishio, fnishio@faculty.chiba-u.jp (Fundamental Research Field of Remote Sensing: Snow and Ice), Center for Environmental Remote Sensing (CEReS), Chiba University, Japan.

Prof. Dr. Josaphat Tetuko Sri Sumantyo, jtetukoss@faculty.chiba-u.jp (Fundamental Research Field of Remote Sensing: Microwave Remote Sensing), Center for Environmental Remote Sensing (CEReS), Chiba University, Japan.

Prof. Dr. James-Holm Kennedy, jhk@pixi.com (Electronic & optical beam management devices, micromechanical sensors, chemical & biochemical sensors, novel electronic devices, force sensors, gas sensors, magnetic sensors, optical sensors.), University of Hawaii, USA.

Prof. Dr.-Ing. Axel Hunger, axel.hunger@uni-due.de (Adaptive e-Learning, adaptive instructional systems, e-course and its applications, pedagogical analyses of on-line course), University of Duisburg Essen, Germany.

Prof. Dr. Koichi Ito (Printed Antenna, Small Antenna, Medical Application of Antenna, Evaluation of Mutual Influence between Human Body and Electromagnetic Radiations), Chiba University, Japan.

Prof. Masaaki Nagatsu, tmnagat@ipc.shizuoka.ac.jp, (Plasma Science and Technology) Research

Institute of Electronics,Shizuoka University

Prof. Michiharu Tabe, tabe.michiharu@shizuoka.ac.jp, (Nano Devices) Research Institute of Electronics, Shizuoka University

Prof. Hiroshi Inokawa, inokawa06@rie.shizuoka.ac.jp, (Nano Devices), Research Institute of Electronics, Shizuoka University

Prof. Hidenori Mimura, mimura.hidenori@shizuoka.ac.jp, (Vacuum Electron Devices) Research Institute of Electronics, Shizuoka University

FULL-TIME FACULTY

Abdul Halim, ahalim@ee.ui.ac.id (Bachelor, Keio Univ., Japan, 1995; M.Eng., Keio University, Japan, 1997; D.Eng., Tokyo Institute of Technology, Japan, 2000) Control system engineering, power system engineering, computer simulation, intelligent engineering, applied mathematics.

Abdul Muis, muis@ee.ui.ac.id (ST., Universitas Indonesia, 1998; M.Eng., Keio Univ., 2005; Dr., Keio Univ., Japan 2007) Robotics, control software engineering.

Agus Rustamadji Utomo (Ir., Universitas Indonesia, 1985; MT., Universitas Indonesia, 2000) Electrical power & energy system.

Agus Santoso Tamsir, tamsir@ee.ui.ac.id (Ir., Universitas Indonesia, 1987; MT., Universitas Indonesia, 1996; Dr., UKM, Malaysia 2008) Optical communication, III-V compound devices, MEMS.

Aji Nur Widyanto, aji.n.widyanto@gmail.com (ST., Universitas Indonesia, 2004; MT., Universitas Indonesia, 2009) Electrical power measurement.

Ajib Setyo Arifin, ajib@ee.ui.ac.id (ST., Universitas Indonesia, 2009; MT., Universitas Indonesia, 2011) Telecommunication, information theory, wireless sensor network.

Amien Rahardjo, amien@ee.ui.ac.id (Ir., Universitas Indonesia, 1984; MT., Universitas Indonesia, 2004) Electromagnetic, electric power energy conversion.

Anak Agung Putri Ratna, ratna@eng.ui.ac.id (Ir., Universitas Indonesia, 1986; M.Eng., Waseda University. Japan., 1990; Dr., FTUI, 2006) Computer network, web-based information system.

Arief Udhiarto, arief@ee.ui.ac.id (ST., Universitas Indonesia, 2001; MT., Universitas Indonesia, 2004; Dr.Eng, Shizuoka University Japan) Nanoelectronics Devices, Organic Electronic Devices

Aries Subiantoro, biantoro@ee.ui.ac.id (ST., Universitas Indonesia, 1995; M.Sc. Univ. Karlsruhe, Germany, 2001; Dr. UI, 2013) Expert control system, system identification.

Basari, basyarie@ee.ui.ac.id (ST., Universitas Indonesia, 2002; M.Eng., Chiba University, 2008; D.Eng., Chiba Univ., Japan, 2011) Antenna for Biomedical applications (Communications, Imaging Treatment), Microwave Engineering, Mobile Satellite Communications.

Budi Sudiarto, budi@ee.ui.ac.id (ST., Universitas Indonesia, 2001; MT., Universitas Indonesia, 2005) High voltage and current, electrical measurement)

Catur Apriono, catur@eng.ui.ac.id (ST., Universitas Indonesia, 2009; MT., Universitas Indonesia, 2011, Ph.D., Shizuoka University, Japan, 2015, Dr.,Universitas Indonesia, 2016) Antenna, microwave, terahertz technology.

Chairul Hudaya, c.hudaya@eng.ui.ac.id (ST., Universitas Indonesia, 2006; M.Eng., Seoul National University, 2009; Ph.D., Korea Institute of Science and Technology - University of Science and Technology, Korea, 2016) Electric materials, electrical power systems, energy storage and conversion, energy management.

Dodi Sudiana, dodi.sudiana@ui.ac.id (Ir., Universitas Indonesia, 1990; M.Eng., Keio University, Japan, 1996; D.Eng., Chiba Univ., Japan, 2005) Image processing, remote sensing.

Eko Adhi Setiawan, ekoas@ee.ui.ac.id (Ir., Elektro Trisakti University; MT, Universitas Indonesia, 2000; Dr.-Ing., Universität Kassel, Germany, 2007) Virtual power plant, electrical power supply, electrical energy conversion.

F. Astha Ekadiyanto, fasthae@yahoo.com (ST., Universitas Indonesia, 1995; M.Sc., Univ. Duisburg Essen, Germany, 2005) Distributed Peer-to-Peer Systems, Content/Data Centric Network, Cyber Physical Systems.

Feri Yusivar, yusivar@ee.ui.ac.id (Ir., Universitas Indonesia, 1992; M.Eng. Waseda University, Japan, 2000; D.Eng., Waseda University, Japan, 2003) Control systems, motor control.

Fitri Yuli Zulkifli, yuli@eng.ui.ac.id (ST., Universitas Indonesia, 1997; M.Sc., Univ. Karlsruhe, Germany, 2002, Dr., Universitas Indonesia, 2008) Antenna and microwave communications.

Gunawan Wibisono, gunawan@ee.ui.ac.id (Ir., Universitas Indonesia, 1990; M.Eng., Keio Univ.,

1995; Ph.D. Keio Univ., Japan, 1998) Coding & wireless communications, optical communications, telecommunication regulation.

I Gde Dharma Nugraha, i.gde@eng.ui.ac.id (ST., Universitas Indonesia, 2008; MT., Universitas Indonesia, 2009) Embedded Systems Web Application Technology, Database optimization

I Made Ardita, made@eng.ui.ac.id (Ir., Universitas Indonesia, 1985; MT., Universitas Indonesia, 2000) Electro-mechanical conversion, power system planning.

Mia Rizkinia, mia@ee.ui.ac.id (ST., Universitas Indonesia, 2008; MT., Universitas Indonesia, 2011) Image processing, remote sensing.

Muhammad Suryanegara, suryanegara@gmail.com, m.suryanegara@ui.ac.id (ST., Universitas Indonesia, 2003; M.Sc., UCL, UK, 2004; Dr.,Tokyo Institute of Technology, Japan, 2011) Telecommunication, Mobile Wireless, Technological Innovation and Policy.

Muhammad Asvial, asvial@ee.ui.ac.id (Ir., Universitas Indonesia, 1993; M.Eng., Keio Univ., Japan, 1998; Ph.D., Surrey Univ. UK, 2003) Spread spectrum, mobile communication, multimedia system, satellite communication.

Muhammad Salman, salman@ee.ui.ac.id (ST., Universitas Indonesia, 1995; M.Info Tech, Monash University, Australia, 2002;Dr. Universitas Indonesia,2015) Computer networks, multimedia.

Prima Dewi Purnamasari, prima.dp@ui.ac.id (ST., Universitas Indonesia, 2006; MT., Universitas Indonesia, 2009; M.Sc., Univ. Duisburg Essen, Germany, 2008) Distributed system, computer supported collaborative work.

Purnomo Sidi Priambodo, pspriambodo@ee.ui.ac.id (Ir., Elektro UGM, 1987; M.Sc., Oklahoma State Univ., 1996; Dr., Texas-Arlington, USA, 2003) Semiconductor laser, photonic, physics.

Retno Wigajatri Purnamaningsih, retno@ee.ui.ac.id (Ir., ITB, 1985; MT., Opto PPSUI, 1992; Dr., Universitas Indonesia, 2006) Optoelectronics, Optical Instrumentation

Taufiq Alif Kurniawan, taufiq.alif@ui.ac.id (ST., Universitas Indonesia 2009; M.Sc.Eng, NTUST, Taiwan, 2011) Radio frequency integrated circuit, analog integrated circuit and VLSI.

Tomy Abuzairi, tomy@ee.ui.ac.id (ST., Universitas Indonesia 2009; M.Sc., NTUST, Taiwan, 2012; Ph.D., Shizuoka University,2016) Thin film nano-technology, optoelectronic device, biotechnology device.

Wahidin Wahab, wahidin@ee.ui.ac.id (Ir., Universitas Indonesia, 1978; M.Sc., UMIST, 1983; PhD, UMIST, UK, 1985) Control engineering, robotics & automation.

Yan Maraden Sinaga, maradens@eng.ui.ac.id (ST., Universitas Indonesia, 2004; MT., Universitas Indonesia, 2009; M.Sc., Univ. Duisburg Essen, Germany, 2009) Computer Networks and Protocols, Artificial Intelligence, Computer Vision

BOARD OF EMIRITUS FACULTY

Prof. Dr. Ir. Djoko Hartanto, M.Sc., djoko@ee.ui.ac.id (Ir., Universitas Indonesia, 1971; M.Sc., University of Hawaii, USA, 1989; Dr., Elektro FTUI, 1993; Prof., UI, 1996) Microelectronic devices, sensor devices.

Prof. Dr. Ir. Bagio Budiardjo, M.Sc., bbdui@ee.ui.ac.id (Ir., Universitas Indonesia, 1972; M.Sc., Ohio State Univ., USA, 1980; Dr., Elektro FTUI, 2002; Prof., UI, 2005) Computer architecture, protocol engineering, pervasive computation.

Prof. Dr. Ir. Djamhari Sirat, M.Sc., djsirat@ee.ui.ac.id (Ir., Universitas Indonesia, 1972; M.Sc., UMIST; PhD, UMIST, UK, 1985) Telecommunication regulation.

Dr. Ir. Ridwan Gunawan, M.T., ridwan@eng.ui.ac.id (Ir., Universitas Indonesia, 1978; MT., Universitas Indonesia, 1994; Dr., Universitas Indonesia, 2006) Electrical power transmission and reliability.

Dr. Uno Bintang Sudibyo,DEA uno@ee.ui.ac.id (Ir., Universitas Indonesia, 1972; DEA, INPG Grenoble, France, 1987; Dr., Univ. Montpellier II USTL, France, 1991) Electrical power conversion.

Ir. Endang Sriningsih, MT

Ir. Arifin Djauhari, MT

PART-TIME FACULTY

Ardiansyah, S.T., M.Eng. (S.T., UI, M.Eng, Chonam National University, 2014) Internet Engineering

Boma Anantasatya Adhi, S.T., M.T. (S.T., Universitas Indonesia, 2010; MT, Universitas Indonesia, 2013)

Faiz Husnayain, S.T., M.T., M.Sc. (S.T., Universitas Indonesia, 2010; MT, Universitas Indonesia,

2013; M.Sc. NTUST, 2013)

Filbert Hilman Juwono, filbert@ee.ui.ac.id (S.T., Universitas Indonesia, 2007; M.T., Universitas Indonesia, 2009) Wireless communication and signal processing for communication

Muhammad Firdaus Syawalludin Lubis, S.T., M.T. (S.T., Universitas Indonesia, 2010; M.T., Universitas Indonesia, 2013)

Ruki Harwahyu, S.T., M.T., M.Sc. (S.T., Universitas Indonesia, 2011; M.T., Universitas Indonesia, 2013; NTUST, 2013)

Victor Widiputra, S.T., M.T. (S.T., Universitas Indonesia, 2014; M.T., Universitas Indonesia, 2015) Power System

1.5.4. DEPARTMENT OF METALLURGY AND MATERIALS ENGINEERING

GENERAL

Department of Metallurgy was originally established as a study program under Faculty of Engineering, Universitas Indonesia in 1965. Due to the lack of qualified lecturers and infrastructure, the first academic activity was only attended by 25 students. For almost 6 years since 1969, the department had stopped accepting new students and focusing the activity to the existing students. In 1975, the department began to accept students again, and in the same year produced the first 7 graduates. Ever since, the department kept continuing and developing its academic activities.

As the science and technology progresses, especially for the engineering materials-based industries, also considering the availability of resources within the department, Department of Metallurgy consolidated its resources and studied the need to add "materials" to the name. Following the idea, on November 5th 2002, Rector of Universitas Indonesia then decreed Department of Metallurgy and Materials Engineering as one of the departments within the Faculty of Engineering.

The curriculum in Metallurgy and Materials Engineering is structured to address problems associated with the metallurgy and design of materials and materials processing to meet the specific needs for a variety of industries. Emphasis is on the basic sciences and principles of engineering with applications of these principles to metallurgy and materials behaviors. The students must obtain a broad foundation in chemistry, physics, and mathematics, which is applied in engineering courses. Within metallurgy and materials engineering courses, students obtain a foundation in the major areas of metallurgy and materials science and to the major classes of engineering materials, which is applied in courses in materials properties and selection, computational methods and in capstone design course. Students gain in-depth experience in another engineering discipline through coordinated technical elective sequences.

In 2016, the department has totally graduated almost 2300 graduates with a degree in bachelor of engineering, 163 graduates with a degree in master of engineering, and 25 graduates with a doctoral degree. At the beginning of first semester of 2016/2017, the department has actively 479 undergraduate students from regular and parallel program, 57 students from undergraduate international program, 71 master students, and 13 doctoral students. Considering the high demand to produce qualified graduates and following current trends toward the global competition, Department of Metallurgy and Materials Engineering is committed to continuously improve its academic activities including teaching and learning process as well as research activities. As a part of national education system, which has the objective to develop the intellectual life of the nation through human resources development by conducting three main activities known as tridharma ("three duties"), the department is also committed to carry out higher level educations, to conduct scientific research, and to provide community services.

During its development stage, the Department of Metallurgy and Materials Engineering has achieved several milestones, such as:

- Grade A Accreditation for Undergraduate Program from National Accreditation Board, Ministry of National Education (Year 2013 and 2018).
- Establishment of master (1995) and doctoral (2008) programs.
- Grade A Accreditation for Master Program from National Accreditation Board, Ministry of National Education (Year 2014 - 2019)
- Grade A Accreditation for Doctoral Program from National Accreditation Board, Ministry of National Education (Year 2012 - 2017)
- Establishment of "Dual-degree" International Program with Monash University (2003).
- Grant awards from the Government of Republic Indonesia for:
    - Internal Improvement for non-metallic field competence - PHK-A4 (2004)
    - Improvement for external and regional competence – PHK-A2 (2004-2006)
    - Internationalization of academic and research activities in information technol-

ogy, energy and nonmaterial – PHKI (2010-2013)

- Establishment of Center for Materials Processings and Failure Analysis (CMPFA), a venture unit to support the materials engineering community and industry (2001).
- Intensive academic and research collaborations with international institutions, such as Monash University (Australia), Kagoshima University (Japan), Nanyang Technological University (Singapore), Yeungnam University and KITECH (Korea) (since 2006).
- Materials Testing Laboratory was accredited ISO 17025 (2011)

Corresponding Address

Department of Metallurgy and Materials Engineering, Faculty of Engineering,

Universitas Indonesia

Kampus UI Depok 16424, Indonesia
Phone: +62-21-7863510
Fax: +62-21-7872350
Email: info@metal.ui.ac.id
http://www.metal.ui.ac.id

VISION AND MISSION OF THE DEPARTMENT OF METALLURGY & MATERIALS ENGINEERING

Vision

In line with the vision and mission of Universitas Indonesia and Faculty of Engineering, the vision of the Department of Metallurgy and Materials Engineering is "As a research-based center of excellence, as well as referral center and solution provider for problem in the field of metallurgy and material engineering both nationally and globally."

Mission

To achieve such a vision, Department of Metallurgy and Materials Engineering put its mission:

- Providing broad access to education and research for the public and industry society
- Producing high quality graduates with strong academic background and comprehensive skills in process technology, material engineering and design, and are capable of playing active and dynamic role in national, regional and international communities
- Conducting quality Tridharma (three duties) relevant to the national and global challenges
- Creating conducive academic environment to support the vision of Department of Metallurgy and Materials Engineering

STAFF OF THE DEPARTMENT OF METALLURGY & MATERIALS ENGINEERING

Head of Department

Dr. Ir. Sri Harjanto

Vice Head of Department

Dr. Deni Ferdian, ST, M.Sc.

HEAD OF LABORATORY

Head of Chemical Metallurgy Laboratory:

Dr. Ir. Rini Riastuti, M.Sc.

Head of Physical Metallurgy Laboratory:

Prof. Dr. Ir. Winarto, M.Sc (Eng)

Head of Mechanical Metallurgy Laboratory:

Ir. Bambang Priyono, MT

Head of Processing Metallurgy Laboratory:

Dr. Ir. Dwi Marta Nurjaya, MT

Head of Metallography & Heat Treatment Laboratory:

Dr. Ir. Yunita Sadeli, M.Sc

Head of Corrosion & Metal Protection Laboratory:

Dr. Ir. Andi Rustandi, MT.

BOARD OF PROFESSORS

Prof. Dr. Ir. Eddy Sumarno Siradj, M.Eng., siradj@metal.ui.ac.id (Prof., Ir, UI; M.Eng, University of Birmingham – UK; Dr, University of Sheffield – UK), Metallurgical Eng., Metallurgical Manufacturing Process & Management, Thermo-mechanical Control Process.

Prof. Dr. Ir. Johny Wahyuadi Soedarsono, DEA., jwsono@metal.ui.ac.id (Prof., Ir, UI; DEA & Dr., École Européenne de Chimie, Polymères et Matériaux de Strasbourg – France), Metallurgical Engineering, Corrosion & Protection, Metallurgy Extraction, Mineral Processing.

Prof. Dr. Ir. Anne Zulfia, M.Phil.Eng., anne@metal.ui.ac.id (Prof., Ir, UI; M.Phil.Eng., & Dr., University of Sheffield – UK), Metallurgical Engineering, Composite Materials & Advance Material.

Prof. Dr-Ing. Ir. Bambang Suharno, suharno@metal.ui.ac.id (Prof., Ir, UI; Dr-Ing., RWTH Aachen – Germany), Metallurgical Engineering, Metal Casting and Alloy Design , Iron & Steel Making, Mineral Processing.

Prof. Dr. Ir. Bondan Tiara, M.Si., bondan@eng.ui.ac.id (Prof., Ir, UI; M.Si, UI; Dr, Monash University – Australia), Metallurgical Engineering, Metallurgy of Aluminum Alloy, Nano Technology, Materials Processing and Heat Treatment

Prof. Dr. Ir. Dedi Priadi, DEA., dedi@metal.ui.ac.id (Prof.,Ir, UI ; D.E.A. & Dr, Ecole des Mines de Paris - France), Metal Forming.

Prof. Ir. Muhammad Anis, M.Met., Ph.D., anis@metal.ui.ac.id (Prof., Ir, UI ; M.Met &Ph.D, University Sheffield - UK), Welding Metallurgy and Metallurgy Physic.

Prof. Dr. Ir. A. Herman Yuwono, M. Phil. Eng ahyuwono@metal.ui.ac.id (Prof., Ir, UI; M.Phil.Eng, Univ. of Cambridge - UK, PhD, NUS – Singapore), Nanomaterial.

Prof. Dr. Ir. Winarto, M.Sc., winarto@metal.ui.ac.id (Prof., Ir, UI; M.Sc (Eng), Technical Univ. of Denmark - Denmark; PhD, Univ. of Wales, Swansea - UK), Welding Metallurgy & Technology, Failure Analysis of Materials.

INTERNATIONAL ADJUNCT PROFESSORS

Prof. Kyoo-Ho Kim, School of Materials Science and Engineering, Yeungnam University (Korea), Energy & nano-materials

Prof. Kozo Obara, Department of Nano-structured and Advanced Materials, Kagoshima University (Japan), Energy & nano-materials

Prof. Freddy Y.C. Boey, School of Materials Science and Engineering, National Technological University (Singapore), Nano-materials & Biomedical Engineering

Prof. Philippe Lours, École nationale supérieure des mines d'Albi-Carmaux, (France) Superalloys, aerospace material

FULL-TIME FACULTY

Andi Rustandi, rustandi@metal.ui.ac.id (Ir, ITB ; MT, ITB; Dr, UI), Corrosion & Protection, Metallurgy Extraction, Mineral Processing.

Badrul Munir, bmunir@metal.ui.ac.id (ST, UI, M.Sc. Chalmer University - Sweden, PhD, Yeungnam University – Korea), Electronic Material

Bambang Priyono, bpriyono@metal.ui.ac.id (Ir, UI; MT, UI, Dr. Candidate, UI), Catalyst Material, Energy Materials.

Deni Ferdian, deni@metal.ui.ac.id (ST, UI; M.Sc, Vrije Universiteit Amsterdam – The Netherlands; Dr, Institut National Polytechnique de Toulouse - France), Failure Analysis, Casting & Solidification, Phase Transformation

Donanta Dhaneswara, donanta.dhaneswara@ui.ac.id (Ir, UI; M.Si, UI; Dr, UI), Metal Casting and Alloy Design, Ceramic Materials and Membran Technology.

Dwi Marta Nurjaya, jaya@metal.ui.ac.id (ST,UI; MT, UI; Dr., UI), Material Characterization and Geo-Polymer Materials

Muhammad Chalid, chalid@metal.ui.ac.id (SSi, UI, M.Sc, TU Delft – The Netherland, Ph.D, University of Groningen, The Netherlands), Polymer Technology, Bio-Polymers & Material Chemistry

Myrna Ariati Mochtar, myrna@metal.ui.ac.id (Ir, UI ; MS, UI; Dr, UI), Thermo-Mechanical Treatment & Powder Metallurgy

Nofrijon Sofyan, nofrijon@metal.ui.ac.id (Drs, Universitas Andalas; M.Si, UI; M.Sc, Auburn Univ USA; Dr, Univ. Auburn (Auburn) - USA), Nanomaterial, Electronic Ceramic

Rahmat Saptono, saptono@metal.ui.ac.id (Ir, UI, M.Sc.Tech, Univ. of New South Wales, Australia, Ph.D, Univ. of Texas Arlington (UTA) - USA), Metal Forming, Mechanical Behaviour of Materials in Design, Manufacture and Engineering Applications

Rini Riastuti, riastuti@metal.ui.ac.id (Ir, UI ; M.Sc, University of Manchester Instute of Science & Tech., -UK, Dr, UI), Electro-Cemical & Corrosion.

Sotya Astutiningsih, sotya@metal.ui.ac.id (Ir, UI; M.Eng, Katholieke Universiteit Leuven - Belgium; PhD, UWA – Australia), Mechanical Metallurgy & Geo-polymer.

Sri Harjanto, harjanto@metal.ui.ac.id (Ir, UI, Dr. Eng, Tohoku University - Japan), Chemical Synthesis of Materials, Mineral & Waste Materials Processing, Extractive Metallurgy.

Wahyuaji Narotama Putra (ST, MT, Ph.D Candidate of Nanyang Technological University - Singapore) Electrical Material

Yudha Pratesa, yudha@metal.ui.ac.id (ST, UI; MT, UI), Biomaterial, Material Degradation & Protection, Chemical Metallurgy

Yunita Sadeli, yunce@metal.ui.ac.id (Ir, UI; M.Sc, University of Manchester Instute of Science & Tech., - UK, Dr, UI), Corrosion & Total Quality Management.

PART-TIME FACULTY

Prof. Ir. Sutopo, M.Sc., Ph.D, sutopo@metal.ui.ac.id (Ir, UI ; M.Sc & Ph.D, University of Wiscounsin - USA), Composite Material & Thermo-metallurgy.

Sari Katili, sari@metal.ui.ac.id (Dra, UI; MS, UI), Chemical Metallurgy.

Jaka Fajar Fatriansyah, fajar@metal.ui.ac.id (S.Si, UGM, M.Sc, P.hD, Hokkaido University, Japan) Soft matter, Applied Physic, Polymer

STUDY PROGRAM

Department of Metallurgy & Materials Engineering manages the course program as follows:

- Under-graduate Program (S1 Program) of Metallurgy & Materials Engineering.
- Magister Program (S2 Program) of Metallurgy & Materials Engineering
- Doctoral Program (S3 Program) of Metallurgy & Materials Engineering

1.5.5. DEPARTMENT OF ARCHITECTURE

GENERAL

Department of Architecture at the Universitas Indonesia (formerly known as Architectural Engineering Major) was established in 1965 under the UI Faculty of Engineering (FTUI) in Jakarta (established a year earlier through Presidential Decree No. 76 dated July 17, 1964). In the early days, education at the FTUI Architectural Engineering was done through a system of per-level or per- year full professional education. The average completion time was 7 years with an Engineer (Ir.) degree. Then in 1978, the Semester Credit System (SKS) went into effect with a minimum number of acquired semester credit units of 160 credits. The average duration of the study was five years, and the title was still Engineer (professional education). Since 1996, a four-year bachelor's education program was implemented with a total of 144 credits, producing an academic degree Bachelor of Engineering (ST). In the same year, after 31 years of existence, Architecture Program of Study at UI received its decree by the Directorate General for Higher Education No. 215/DIKTI/ KEP/1996 dated July 11, 1996.

In 2000, Department of Architecture streamlined the 1996 curriculum by publishing the 2000 Curriculum along with the application of problem-based learning method, collaborative and student-centered learning. The 2000 Curriculum stated clearly, that the direction for bachelor's architecture education is pre-professional.. In the same year, Master of Architecture program was established with 2 streams , namely Architectural Design and Urban Design. Over the years, the master's program has grown into 6 streams, in addition to the two already mentioned earlier, the specialization program of Urban Housing and Settlements, Real Estate, History and Theories of Architecture and Urbanism and Building Technology and Sustainability were established. At this time, through the new curriculum (2012 Curriculum), the six specializations were streamlined into three which are:

- Creative process stream: Architectural Design, Urban Design, Property Development
- Humanities stream: History and Theories of Architecture, Urban Housing and Settlement
- Technology and sustainability stream: Architecture and Technology

In 2004, Architectural Engineering Major changed to Department of Architecture. The degree for its graduates was also altered from Bachelor of Engineering (ST) to Bachelor of Architecture (S.Ars) for the bachelor graduates and Master of Architecture (M.Ars) for the master's. From 2000 until 2012, the Department of Architecture went through several changes in Curriculum and thus the curriculum is integrated and emphasize several points:

1. lexibility in following the development of science and technology.
2. Curriculum that responses in fulfilling the demands of professionals within national, regional and also international level.
3. Referring to the National Education System based on Competence. The core of the curriculum is in respect to the profession of architect in collaboration with IAI, and refers to UIA as the international standards..

In 2008 a new study program, Interior Architecture Undergraduate Program is opened), which emphasizes the of interiority aspects of the design in architecture. The opening of this Interior Architecture study program allows the opportunityto explore and develop the field of interior architecture in Indonesia.

In 2009 a PhD program and a one-year program of Professional Program of Architect (PPAR) are set. Ph.D program is intended to strengthen the Department of Architecture as a leading architectural research-based institution. PhD student's research is focused on two areas: major research areas (research based on architectural issues) and minor research area (related to specialized area of study) in which PhD program students have the opportunity to take courses outside the discipline of architectural discipline to specifically support the knowledge, thoughts, and methods of its major. The learning process is conducted through the exploration of the width and depth aspects of knowledge about the studied issues. Meanwhile, for PPAR, the education is carried in a year to

complete graduates with the actuality of professional architecture practice. Graduates of PPAR are also allowed to transfer the credit in UI to continue for a master degree in architecture.

Department of Architecture has also commenced an International Class (KKI) of undergraduate degree in architecture, with single degree program (only one semester abroad), or a double degree program (4 semesters in UI and the rest abroad). This program is in collaboration with leading universities in the world such as the Queensland University of Technology (QUT), Curtin University (Australia), Univesity of Florida and Politecnico di Milano (Italy). In addition, S1 students who have excellent academic achievements are able to attain a Fast-Track program (4 years bachelor + 1 year master), a total of 5 years, to accomplish a Master Degree in Architecture..

The Department of Architecture UI has an A accreditation from the Higher Education BAN, Indonesian Ministry of Research and Higher Education.). The Undergraduate Program Department of Architecture program has been also assessed by the ASEAN University Network (AUN) in 2010. For more profiles of FTUI Department of Architecture can be viewed at the website: http://architecture.ui.ac.id.

VISION and MISION

VISION
Toward an excellent architectural education institution with regional and international recognition.

MISSION
To deliver excellent architectural education that leads the development of architectural knowledge and promotes meaningful application of knowledge for the society.

Corresponding Address
Department of Architecture
Faculty of Engineering, Universitas Indonesia
Kampus UI, Depok 16424
Phone: 021 – 786 3512
Fax: 021 – 786 3514
E-mail: arsitektur@eng.ui.ac.id;architecture@ui.ac.id
http://architecture.ui.ac.id

STAFF OF THE DEPARTMENT OF ARCHITECTURE

Head of Department:
Prof. Yandi Andri Yatmo, ST., M.Arch., Ph.D
Vice Head of Department:
Rini Suryantini, ST., M.Sc
Coordinator of Interior Architecture Program
Dr.-Ing Dalhar Susanto
Coordinator of Architecture Graduate Program
Prof. Ir. Triatno Yudo Harjoko, M.Sc., Ph.D
Head of Fabrication Lab
Paramita Atmodiwirjo, ST., M.Arch., Ph.D
Head of Photography Laboratory
Ir. Toga H. Pandjaitan, Grad. Dipl. AA
Head of Building Physics Laboratory
Ir. Toga H. Pandjaitan, Grad. Dipl. AA

BOARD OF PROFESSORS

Prof. Ir. Triatno Yudo Harjoko., Msc, Ph.D
(Ir. Architecture Universitas Indonesia, 1978; M.Sc. in Town Planning, University of Wales, UK, 1986; Ph.D in Environmental Design, University of Canberra, Professor in 2008) Architectural Design, Research Methods, Professor of Urban Housing and Settlement

Prof. Yandi Andri Yatmo, M.Arch., Ph.D
(ST, Architecture Universitas Indonesia; Dip.Arch, Univ.Of Sheffield; M.Arch, Univ. of Sheffield; Ph.D, Univ. of Sheffield) Architectural Design, Urban Architecture

Prof. Kemas Ridwan urniawan, M.Sc., Ph.D
(ST. Architecture Universitas Indonesia; M.Sc & Ph.D Bartlett School of Architecture, University of College London, UK;) Architectural Design, Architectural Theory and History, Heritage in Architecture

BOARD OF EMERITUS FACULTY

Prof. Dr. Ir. Abimanyu T. Alamsyah, M.Sc
(Ir. Architecture Universitas Indonesia, 1975; MS, Institut Pertanian Bogor, 1992: Dr. Environmental Sciences Universitas Indonesia, 2006) Urban and Regional Planning, Research Methods, Coastal Architecture.

Prof. Dr. Ir. Emirhadi Suganda, M.Sc
(Ir. Architecture Universitas Indonesia, 1975; M.Sc. Asian Institute of Technology (AIT) Bangkok, Thailand, 1991; Dr., Environmental Sciences Universitas Indonesia, 2007) Project Management, Building Technology, Architectural Design.

Prof. Ir. Gunawan Tjahjono, Ph.D., M.Arch
(Ir. Architecture Universitas Indonesia, 1979; M.Arch. University of California Los Angeles, USA, 1983; Ph.D., University of California Berkeley, USA, 1989) Architectural Design, Ethnics Architecture, Design Theories and Methods in Architecture, Professor of Architectural Design

FULL-TIME FACULTY

Ahmad Gamal
(S.Ars Architecture Universitas Indonesia; MSc, London School of Public Relation; MCP, Urban & Regional Planning, University of Illinois Urbana Champaign, USA); Dr.Phil., Urban & Regional Planning, University of Illinois Urbana Champaign, USA) Architectural Design, Urban and Regional Planning, Community Based Planning

Achmad Hery Fuad
(Ir., Architecture Universitas Indonesia; M.Eng., Waseda University, Japan) Architectural Design, Urban Design, Urban Housing and Settlements.

Antony Sihombing
(Ir. Architecture Universitas Indonesia; MPD. University of Melbourne, Australia; Ph.D. University of Melbourne, Australia) Architectural Design, Urban Housing and Settlements, Building Technology

Azrar Hadi
(Ir. Architecture Universitas Indonesia; Ph.D Universiti Teknologi Malaysia) Project Management, Urban Housing and Settlements, Building Technology, Architectural Design

Dalhar Susanto
(Ir. Architecture, Universitas Diponegoro, Semarang; Dr.-Ing. Uni. Stuttgart, Germany) Architectural Design, Building Technology, Urban Housing and Settlements.

Dita Trisnawan
(ST. Architecture, Universitas Gajah Mada, Yogjakarta; M.Arch, M.Suburb and Town Design, University of Miami, USA) Urban Design, Urban Architecture, Industrial Planning, Tourism Design and Real Estate

Enira Arvanda
(ST, Architecture Universitas Indonesia; Master, Instituto Europeo di Disain, Milan, Italy) Interior Architecture, Ergonomy, Furniture Design

Evawani Ellisa
(Ir. Architecture, Universitas Gajah Mada, Yogjakarta; M.Eng; Ph.D., University of Osaka, Jepang) Architectural Design, Urban Design

Hendrajaya Isnaeni
(Ir. Architecture Universitas Indonesia; M.Sc. University of Surrey, UK; Ph.D, University of

Melbourne, Australia) Architectural Design & Professions, Theory of Islamic Architecture, Environmental Behavior

Herlily
(Ir. Architecture Universitas Indonesia; M.Urb.Des, University of Sydney, Australia; Ph.D Candidate, UC Berkeley, USA) Architectural Design, Urban Design Theory, Studies of Architecture and Urbanism in Developing Country, Urban Studies.

Joko Adianto
(ST, Architecture Universitas Trisakti; M.Ars, Architecture Universitas Indonesia)Architectural Design and Professions, Building Technology, Design Theory & Methods, Urban Informality.

Kristanti Paramita
(S.Ars, Architecture Universitas Indonesia; M.A, University of Sheffield, UK) Architectural Design, Communication Techniques in Architecture.

Mikhael Johannes
(S.Ars, Architecture Universitas Indonesia; M.Ars, Universitas Indonesia). Design and Method in Architecture, Digital Design and Communication Technique in Architecture.

M. Nanda Widyarta
(B.Arch, Architecture, Oklahoma University, USA; M.Arch, Architecture History & Theory, AA School of Architecture London, UK). Architectural Design, History of Art, Architectural History and Theory, Design Theory and Methods in Interior Architecture, Design Theory & Methods in Architecture, Architecture and Texts.

Nevine Rafa
(S.Ars, Architecture Universitas Indonesia; MA, Interior Design, University of Westminster, UK). Communication Techniques in Interior Architecture, Interior Design.

Paramita Atmodiwirjo
(ST. Architecture Universitas Indonesia; M.Arch. Univ. of Sheffield, UK, Ph.D Architecture, Univ. of Sheffield) Architectural Design, Design/Research Methods in Architecture, Environmental Behavior, Communication Techniques in Architecture.

Rini Suryantini
(ST, Architecture Universitas Indonesia; M.Sc., Institute for Regional Science & Planning University of Karlsruhe (TH), Germany). Architectural Design, Urban and Regional Planning, Landscape and Sustainability in Architecture.

Rossa Turpuk Gabe Simatupang
(S.Ars, Architecture Universitas Indonesia; M.Ars, Architecture Universitas Indonesia). Architectural Design, Communication Techniques in Architecture, Urban Housing and Settlements.

Teguh Utomo Atmoko
(Ir. Architecture Universitas Indonesia; MURP, University of Hawai'i, USA) Urban Design, Architectural Design, Real Estate, Heritage in Architecture

Toga H. Pandjaitan
(Ir. Architecture Universitas Indonesia; Grad. Dipl. AA, Inggris) Architectural Design, Building Physics, Photography, Ethnics Architecture

Yulia Nurliani Lukito Harahap
(ST, Architecture Universitas Indonesia; M.Des.Science, Harvard University, Dr.-Ing, RWTH Aachen University, Germany). Architectural Design, Architectural Theory and History, Design Theory and Methods of Architecture.

PART-TIME FACULTY

Achmad Sadili Somaatmadja
(Ir., Architecture Universitas Indonesia; M.Si, Environmental Sciences Universitas Indonesia) Building Technology, Architectural Design

AA Ayu Suci Warakanyaka
(S.Ars, Architecture Universitas Indonesia; MFA, Interior Architectural Design University of Edinburgh) Interior Architectural Design

Anna Zuchriana
(S.Sn, Seni Grafis Jakarta Arts Institute/IKJ; MSn, Jakarta Arts Institute/IKJ, Jakarta). Fine Arts, Graphics Arts.

Arif Rahman Wahid
(S.Ars., Architecture Universitas Indonesia; MA Narrative Environments
Narrative Environment, Interior Architecture

Ary Dananjaya Cahyono
(S.Sn, Seni Patung Bandung Institute of Technology; MFA Glasgow School of Arts) Visual Arts, Sculpture

Azrar Hadi
(Ir. Architecture Universitas Indonesia; Ph.D Universiti Teknologi Malaysia) Project Management, Urban Housing and Settlements, Building Technology, Architectural Design

Cut Intan Djuwita
(Ir. Architecture Universitas Indonesia; Environmental Design, University of Missouri, USA)

Interior Design

Diane Wildsmith AIA, RIBA
(B.Arts in Architecture UC Berkeley California, USA; MSc in Architecture Carnegie Mellon University, Pitsburgh, USA; Master of International Policy and Practice George Washington University, USA) Architectural Design, Sustainability in Architecture

Endy Subijono, Ar.
(Ir, Architecture, Bandung Institute of Technology; MPP, Planning and Public Policy, Rutger University, USA) Professional Ethics

Farid Rakun
(S.Ars, Architecture Universitas Indonesia; M.Arch, Cranbrook Academy of Arts, USA). Architectural Design, Design & Arts, Design Methods in Architecture, Fabrication Lab.

Ferro Yudhistira
(ST, Universitas Sriwijaya, Palembang; M.Ars, Architecture Universitas Indonesia) Architectural Design, Communication Techniques in Architecture, CAD/ArchiCAD

Finarya S.Legoh
(Ir, Architecture Universitas Indonesia; M.Sc.& Ph.D University of Salford United Kingdom) Building Physics, Acoustics.

Iriantine Karnaya
(Dra. Senirupa FSRD-Bandung Institute of Technology; M.Ars, Architecture Universitas Indonesia) Fine Art; Real Estate

Joyce Sandrasari
(ST, Architecture, Universitas Tarumanegara); MALD, Lighting Design, Fachochschuele Wismar, Germany). Lighting Design.

Ova Candra Dewi
(S.Ars., Architecture Universitas Indonesia, M.Sc., Urban Management, Technology University of Berlin, Dr.Ing, Technology University of Hamburg Hamburg, Germany) Environmental Engineering and Energy Economics Bioconversion and Emission Control, Architecture and Sustainability

Ratna Djuwita Chaidir
(Dra., Psychology Universitas Indonesia; Dipl. Pschy, Daarmstaat, Germany) rchitectural Psychology

Siti Handjarinto
(Ir. Architecture Universitas Indonesia; M.Sc. University of Hawai'i, USA) Building Technology, Architectural Design, Building Physics, Lighting Design and Acoustics.

Siti Utamini
(Ir. Architecture, Bandung Institute of Technology) Architectural Design, Communication Techniques in Architecture.

Sukisno
(Ir. Architecture, Universitas Gajah Mada; MSi, Environmental Sciences Universitas Indonesia) Structure and Material Technology, Architectural Design, Urban Ecology

Sri Riswanti
(Dra, Interior Design, FSRD, ISI Yogjakarta; M.Sn, Seni Urban dan Industri Budaya, Jakarta Arts Institute/IKJ) Interior Design, Communication Techniques in Architecture & Interior.

Subandinah Priambodo
(Dra.ITB; MSn, Jakarta Arts Institute/IKJ) Interior Design, Furniture Construction.

Tri Hikmawati
(ST, Architecture Universitas Indonesia; MA, London Metropolitan University, UK). Interior Design

Widyarko
(S.Ars, Arhitecture Universitas Indonesia; M.Ars, Universitas Indonesia).Building Technology and Materials

1.5.6. DEPARTMENT OF CHEMICAL ENGINEERING

GENERAL

The main mission of the Chemical Engineering Department is to provide the highest quality education so that graduates have the necessary knowledge, skills, and experience conducting research with current topics in the field of chemical engineering and biochemical engineering. Starting from the opening of the Gas Engineering Program in 1981, Chemical Engineering Department at UI is now one of the leading chemical engineering departments in Indonesia having excellent accreditation from National Accreditation Board of Indonesia (BAN) and the ASEAN University Network (AUN). Chemical Engineering Department has two study programs, Chemical Engineering (PSTK) and Bioprocess Technology (PSTB), 30 permanent academic staff and about 800 undergraduate and graduate students. In order to enhance the role of the department in the era of biotechnology and life sciences, PSTB was opened in 2008.

Chemical engineering department offers five academic programs: undergraduate program (regular, parallel, international), master program (regular and gas management at Salemba campus), and doctoral program. The chemical engineering department has been adhering to competency-based principles starting in curriculum 2000 up to the recently updated curriculum 2012. The present graduate competencies are based on those recommended by ABET and the Bologna Process and on feedbacks from graduates and industry representatives, aiming at producing graduates who are educated and able to contribute effectively to their communities wherever they choose to live and work. The chemical engineering department is conducting international classes in collaboration with three Australian universities: Monash University, Curtin University and University of Queensland. Students in this international class spend their first four semesters at UI, and spend the subsequent four semesters in Australia. At the end of their study, students will get a Sarjana Teknik degree from UI and a Bachelor of Engineering degree from the partner university. Since 2011, international program students may choose to enroll in a single-degree program at UI following a curriculum that is equivalent to the regular undergraduate curriculum. The department also has established double degree master programs with National Taiwan University of Science and Technology (NTUST) and Curtin University. In this double degree programs, students spend their first year at UI and the second year at NTUST or Curtin University. At the completion of their studies, students will be awarded a Master of Engineering degree from NTUST or Curtin University.

The updated curriculum is now more streamlined and integrated allowing students to take elective courses previously only available in a study program (PSTK or PSTB) or available for a certain level (undergraduate or graduate). It means that students could choose courses that are more suitable to their interest. For those who qualify, there is a fast-track program that allows undergraduate students to obtain both bachelor and master degrees in ten semesters instead of in twelve semesters. Chemical engineering master's program has also prepared a special curriculum for those without an educational background not in chemical engineering. By adopting this special curriculum, applicants with a non-chemical engineering degree are recommended to take the chemical engineering undergraduate core courses to master the fundamentals of chemical engineering before taking more advanced core graduate courses. Graduates of doctoral programs are expected to contribute to the development of science by conducting independent research, usually under supervision of a qualified professor.

Chemical engineering department as one of the departments in the Faculty of Engineering, University of Indonesia has taken part in a research effort with the theme "Sustainable chemical and bioengineering for energy and product development". This research theme is supported by four research groups: chemical and natural product design, sustainable energy, industrial bioprocess technology, and process intensification. Research activities conducted at the Chemical engineering department has received a lot of government funding to support the research activities of students.

Corresponding Address

Chemical Engineering Department
Faculty of Engineering
Universitas Indonesia
Kampus UI Depok 16424, Indonesia
Telp: +62-21-7863516
Fax: +62-21-7863515
Email: dept@che.ui.ac.id
http://www.chemeng.ui.ac.id

VISION, MISION AND OBJECTIVES OF CHEMICAL ENGINEERING DEPARTMENT – FTUI

Vision

"*To become a world class Chemical Engineering Department as center of excellence for education and research in chemical engineering.* "

Mision

The Department seeks to provide the best quality of undergraduate and postgraduate education. The Department will provide a broad-based education and design experience, enabling students to address chemical engineering problems. Furthermore, the Department will provide students with fundamental elements to develop in the profession in response to rapidly changing technology and societal needs and expectations, and, will also develop important soft skills such as problem solving, communication, and group skills.

STAFF OF THE DEPARTMENT OF CHEMICAL ENGINEERING

Head of Department
Prof. Ir. Sutrasno Kartohardjono, M.Sc, PhD
Vice Head of Department
Prof. Dr. Ir. Nelson Saksono, MT
Head of Chemical Engineering Study Program :
Prof. Ir. Sutrasno Kartohardjono, M.Sc, PhD
Head of Bioprocess Engineering Study Program
Dr. Dianursanti, ST., MT

HEAD OF LABORATORY
Head of Chemical and Natural Product Design Laboratory
Prof. Dr. Ir. Mohammad Nasikin, M.Eng
Head of Chemical Process Intensification Laboratory
Prof. Dr. Ir. Setijo Bismo, DEA
Head of Sustainable Energy Laboratory
Dr. Ir. Asep Handaya Saputra, M.Eng
Head of Bioprocess Engineering Laboratory
Dr. Tania Surya U, ST., MT
Head of Basic Chemical Process Laboratory
Ir. Rita Arbianti, M.Si
Head of Chemical Process System Laboratory
Dr.rer.nat. Ir. Yuswan Muharam, MT
Head of Basic Process and Operation Laboratory
Dr. Ir. Sukirno, M.Eng

BOARD OF PROFESSORS

Prof. Dr. Ir. Widodo W. Purwanto, DEA
widodo@che.ui.ac.id (Ir, ITS; DEA and Dr, ENSIGC-INP Toulouse, France): Sustainable energy.

Prof. Dr. Ir. Mohammad Nasikin, M.Eng
mnasikin@che.ui.ac.id (Ir, ITS; M.Eng, Tokyo Institute of Technology, Japan; Dr, UI): Heterogenous catalyst.

Prof. Ir. Sutrasno Kartohardjono, M.Sc, PhD
sutrasno@che.ui.ac.id (Ir, UI; MSc, UTM, Malaysia; PhD, University of New South Wales, Australia): Gas absorption and desorption in hollow fiber membrane contractor, utilization of hollow fiber membrane for efficient biomass production.

Prof. Dr. Ir. Anondho Wijanarko, M.Eng
anondho@che.ui.ac.id (Ir, UI; M.Eng, Tokyo Institute of Technology, Japan; Dr, UI): Bioprocess engineering.

Prof. Dr. Ir. Setijo Bismo, DEA
bismo@che.ui.ac.id (Ir, ITB; DEA and Dr, ENSIGC Toulouse, France): Ozone and plasma technology.

Prof. Dr. Ir. Slamet, MT
slamet@che.ui.ac.id (Ir, UGM; MT, UI; Dr, UI): Photocatalysis.

Prof. Ir. Dr.-Ing. Misri Gozan, M.Tech
mgozan@che.ui.ac.id (Ir, UI; M.Tech, Massey University, New Zealand; Dr.-Ing, TU Dresden, Germany): Environmental bioprocess engineering, waste to energy.

Prof. Dr. Ir. Heri Hermansyah, M.Eng
heri@che.ui.ac.id (ST, UI; M.Eng and Dr, Tohoku University, Japan): Reaction process engineering, bioprocess and biocatalysis.

Prof. Ir. Mahmud Sudibandriyo, M.Sc., Ph.D
msudib@che.ui.ac.id (Ir, ITB; M.Sc and PhD, Oklahoma State University, USA): Thermodynamics adsorption & coalbed methane.

Prof. Dr. Ir. Nelson Saksono, MT
nelson@che.ui.ac.id (Ir, UI; MT, UI; Dr, UI): Elelctrolysis Plasma Technology

FULL-TIME FACULTY

Abdul Wahid wahid@che.ui.ac.id (Ir, UI; MT, UI; Dr, UTM): Modeling and simulation.

Andy Noorsaman Sommeng andy.n.sommeng@gmail.com (Ir, UI; DEA UTC, France; Dr, Ecole Centrale de Paris, France): Process system engineering.

Asep Handaya Saputra sasep@che.ui.ac.id (Ir, UI; M.Eng and Dr, Tokyo Institute of Technology, Japan): Composite material, natural gas transportation.

Bambang Heru bambanghs@che.ui.ac.id (ST, UI; MT, UI; Dr, UI): Bioconversion (biofuel), process computation.

Dewi T. Budi detris@che.ui.ac.id (Ir, UGM; MT, ITB; PhD, Chalmers University, Sweden): Process catalysis.

Dianursanti danti@che.ui.ac.id (ST, UI; MT, UI; Dr, UI): Biomass production and CO2 fixation of microalgae.

Dijan Supramono dsupramo@che.ui.ac.id (Ir, ITB; M.Sc, UMIST, UK): Fluid mechanics in combustion.

Eva Fathul Karamah eva@che.ui.ac.id (Ir, UI; MT, UI; Dr, UI): Wastewater treatment by advanced oxidation processes.

Eny Kusrini ekusrini@che.ui.ac.id (S.Si, UGM; Dr, USM, Malaysia): Lanthanide, nanocomposites, catalyst.

Kamarza Mulia kmulia@che.ui.ac.id (Drs, ITB; M.Sc and PhD, Colorado School of Mines, USA): Controlled release of drug and bioactive compounds, fluid phase equilibria, teaching-learning methods.

Muhammad Ibadurrohman ibad@che.ui.ac.id (ST, UI; MT, UI; MScEng, NTUST, Taiwan; Dr, Imperial College London, UK): Hydrogen production via photocatalysis.

Muhamad Sahlan sahlan@che.ui.ac.id (S.Si, ITB; M.Eng and Dr, TUAT, Japan): Protein Engineering, protein vehicles for nutraceuticals, and biocatalysis.

Praswasti PDK Wulan wulan@che.ui.ac.id (Ir, UI; MT, UI; Dr, UI): Sustainable energy.
Rita Arbianti arbianti@che.ui.ac.id (Ir, UI; M.Si, UI): Natural product.
Setiadi hasbila@che.ui.ac.id (Ir, ITS; M.Eng, Tokyo Institute of Technology, Japan; Dr, UI): Reaction engineering, catalyst and catalysis for renewable, hydrocarbon chemicals/petrochemicals.
Sukirno sukirnos@che.ui.ac.id (Ir, ITB; M.Eng, Tokyo Institute of Technology, Japan; Dr, UI): Tribology, lubricant, biolubricant.
Tania Surya Utami nana@che.ui.ac.id (Ir, UI; MT, UI; Dr, UI): Bioprocess.
Yuliusman usman@che.ui.ac.id (Ir, UI; M.Eng, UTM, Malaysia; Dr, UI): Liquid-liquid extraction, gas and polluttan adsorption, and purification of smoke.
Yuswan Muharam muharam@che.ui.ac.id (Ir, UI; MT, UI; Dr.rer.nat, University of Heidelberg, Germany): Modeling and simulation of chemical process.

PART-TIME FACULTY

Prof. Dr. Ir. Roekmijati WS., M.Si (Ir, UGM; M.Si, UI; Dr, IPB): Industrial waste management, catalysis, polimer.
Tilani Hamid tilanihs@che.ui.ac.id (Ir, ITB; M.Si, UI): Material and corrosion science.
Elsa K. Mulia elsa_krisanti@yahoo.com (S.Si, ITB; PhD, Colorado School of Mines, USA): Applied chemistry, biomass conversion, teaching-learning methods.

1.5.7. DEPARTMENT OF INDUSTRIAL ENGINEERING

GENERAL

Industrial Engineering Education is an answer to a growing need of industrial engineers who have the capabilities of managing production or operations process efficiently and effectively to achieve excellence. Industrial Engineers should be one of the backbones for transforming our national industry to be more competitive and contribute to our nation's welfare. The scope of the term industry is for both service and manufacturing industry.

Industrial Engineering Program was actually formed in the mid 1970s as a part of Mechanical Engineering Department, due to the market needs for a specialized mechanical engineers which defines the current definition of industrial engineers. In 1998, based on Decree by Higher Education Director No 207/DIKTI/Kep/1998 dated June 30 1998, the Industrial Engineering Department was born. With the new status as department, the program had more autonomy and opportunity to enhance the Industrial Engineering Discipline in
Indonesia.

After 10 years as an independent Department, Industrial Engineering has been recognized by the national public and industry as one of the forefronts industrial engineering education in Indonesia. This is shown by the high demand and acceptability of our graduates. Today, our graduates have been accepted not only in the manufacturing industry but also service industry such as governments, hospital, financial service, consulting, information technology and many others. In the manufacturing area, we have graduates in charge of production or operations management, human resource development, maintenance, inventory and logistics, and many more.

Corresponding Address
Department of Industrial Engineering
Faculty of Engineering Universitas Indonesia
Kampus UI Depok 16424, Indonesia
Telp: +62-21-78888805
Fax: +62-21-78885656
Email: ti-ui@ie.ui.ac.id
http://www.ie.ui.ac.id

VISION and MISSION

Vision

" To be a premier industrial engineering higher education institution with good national and international reputation in providing high quality graduates and researches."

Mission

- Establishing education to provide high quality graduates accepted by national and international industry
- Fostering researches to answer the needs of national industry
- Harnessing the knowledge of industrial engineering for the welfare of the society

STAFF OF THE DEPARTMENT OF INDUSTRIAL ENGINEERING

Head of Department:
Dr. Akhmad Hidayatno, ST, MBT

Vice Head of Department:
Dr.-Ing. Amalia Suzianti, ST., M.Sc.

Head of Laboratory
Head of Manufacturing System Laboratory:
Prof. Dr. Ir. T. Yuri M. Zagloel, MEngSc
Head of Human Factors Laboratory:
Ir. Boy Nurtjahyo, MSIE

Head of System Engineering Modeling and Simulation Laboratory:
Dr. Akhmad Hidayatno, ST, MBT
Head of Statistics and Quality Engineering Laboratory:
Prof. Ir. Isti Surjandari P., MT, MA, PhD
Head of Product Development and Innovation Laboratory:
Dr.-Ing. Amalia Suzianti, ST, MSc.
Head of Management Information System and Decision Support Laboratory:
Dr. Ir. M. Dachyar, MSc

BOARD OF PROFESSORS

Prof. Dr. Ir. Teuku Yuri M. Zagloel, MengSc.
yuri@ie.ui.ac.id (Ir, UI; MEngSc., University of New South Wales, Australia ; Dr, UI), Introduction to Industrial Engineering, Total Quality Management, Lean Operations, Sustainable Manufacturing and Innovation, Manufacturing Facilities Planning and Analysis, Manufacturing System.
Prof. Ir. Isti Surjandari P., MT., Ph.D
isti@ie.ui.ac.id (Ir, UI; MT, ITB; MA, Ohio State University, USA; Ph.D, Ohio State University, USA) Introduction to Economics, Industrial Statistics, Multivariate Analysis, Data Mining, Decisions, Uncertainties and Risks, Service Engineering, Advanced Statistics.

FULL-TIME FACULTY

Akhmad Hidayatno, akhmad@eng.ui.ac.id (Ir, UI; MBT, Univ. Of New South Wales, Australia, Dr, UI) System Modelling, Quality System, Industrial Simulation, System Engineering, Technology Management, System Dynamics, Interpersonal Skills, Advance Modelling, System Thinking.
Amalia Suzianti, suzianti@ie.ui.ac.id (ST, UI; MSc., BTU Cottbus, Germany; Dr.-Ing., TU-Berlin, Germany – University of Luxembourg) Product Design, Industrial Engineering Design, Industrial Technology Management, Product Lifecycle Management, Sustainable Manufacturing and Innovation, Knowledge Management, Industrial System Design, Technology Entrepreneurship.
Armand Omar Moeis, armand.moeis@gmail.com (ST, UI; MSc, TU Delft, The Netherlands; Cand Dr., UI) System Modelling, System Engineering, Industrial Simulation, System Dynamics, Advanced Modelling, System Thinking.
Arian Dhini, arian@ie.ui.ac.id (ST, ITB; MT, UI; Cand Dr, UI) Statistics and Probability, Industrial Statistics, Cost Accounting, Multivariate Analysis, Advanced Statistics.
Arry Rahmawan, arry.rahmawan@gmail.com (ST, UI ; MT, UI) System Modelling, System Engineering, Industrial Simulation, System Dynamics
Billy M. Iqbal, billy.iqbal87@gmail.com (SDs, ITB ; MT, UI) Cognitive Ergonomics, Human Digital Modelling and Simulation, Human Factors in Industrial Design, Product Design
Boy Nurtjahyo Moch, boymoch@eng.ui.ac.id (Ir, UI; Wayne State University, USA) Methods, Standards and Work Design, Macro Ergonomics, Cognitive Ergonomics, Human Digital Modelling and Simulation, Human Factors in Industrial Design, Safety Engineering and Management.
Dendi P. Ishak, dendi@ie.ui.ac.id (BSIE ; MSIE, Wayne State University, USA; Cand Dr, University of Malaya, Malaysia) Introduction to Industrial Engineering, Maintenance System, Customer Relationship Management, Competitive Analysis, Information System, Industrial Project Management, Safety Engineering and Management.
Djoko S. Gabriel, dsihono@ie.ui.ac.id (Ir, ITB; MT, ITB; Dr, UI) Plant Layout Design, Industrial Feasibility Analysis, Supply Chain Management, Technology Management.
Erlinda Muslim, erlinda@eng.ui.ac.id (Ir, ITB; MEE, UTM Malaysia) Cost Accounting, Product Design, Industrial Feasibility Analysis, Competitive Analysis, Industrial Psychology and Organization, Industrial Strategic Design, Human Capital Management, Technology Policy, Industrial Policy, Industrial System Design.
Fauzia Dianawati, fauzia@ie.ui.ac.id (Ir, UI; MSi, UI; Cand Dr, ISSTIA, France) Industrial Psychology and Organization, , Industrial Project Management, Industrial Strategic Design, Human Capital Management.
Farizal, farizal@ie.ui.ac.id (SMIA, UI; MSc, Oklahoma State University, USA ; PhD. University of Toledo, USA) Engineering Economics, Linear Programming, Finance and Investments, Operations Research, Advanced Operations Research, Advanced Optimization, Interpersonal Skills.
Inaki M. Hakim, inakimhakim@ie.ui.ac.id (ST, Universitas Sebelas Maret Surakarta ; MT, ITB) Production Process, Industrial Psychology and Organization, Sustainable Manufacturing and Innovation, Reconfigurable Manufacturing System
Komarudin, komarudin01@gmail.com (ST, UI; MEng. UTM, Malaysia; Dr, VU, Brussel, Belgium) System Modelling, Advanced Operations Research, Advanced Optimization, Game Theory, Liniear and

Stochastic Programming, Queuing Theory.

M. Dachyar, mdachyar@yahoo.com, mdachyar@ui.ac.id (Ir, UI; MSc, VU Brussel, Belgium; Dr, IPB) Information System, Industrial Project Management, Customer Relationship Management, Innovation Management, Decisions, Uncertainties and Risks, Service Engineering, Operations Management.

Maya Arlini, maya@ie.ui.ac.id (ST, UI; MT, UI; MBA, NTUST, Taiwan) Methods, Standards and Work Design, Macro Ergonomics, Human Factors in Industrial Design, Safety Engineering and Management.

Rahmat Nurcahyo, rahmat@eng.ui.ac.id (Ir, UI; MEngSc. Univ of New South Wales, Australia; Dr, UI) Production Planning and Inventory Control, Total Quality Management, Maintenance System, Industrial Feasibility Analysis, Competitive Analysis, Human Capital Management.

Yadrifil, yadrifil@yahoo.com (Ir, UI; MA, Oregon State University,USA) Production System, Production Planning and Inventory Control, Lean Operations, Manufacturing Facilities Planning and Analysis, Manufacturing System, Industrial Strategic Design, Operations Management.

PART-TIME FACULTY

Amar Rachman, amar@ie.ui.ac.id (Ir, UI; MEIM, KULeuven, Belgium) Linear Programming, Ope rations Research, Advanced Operations Research, Introduction to Mechanics and Electronics in Factory.

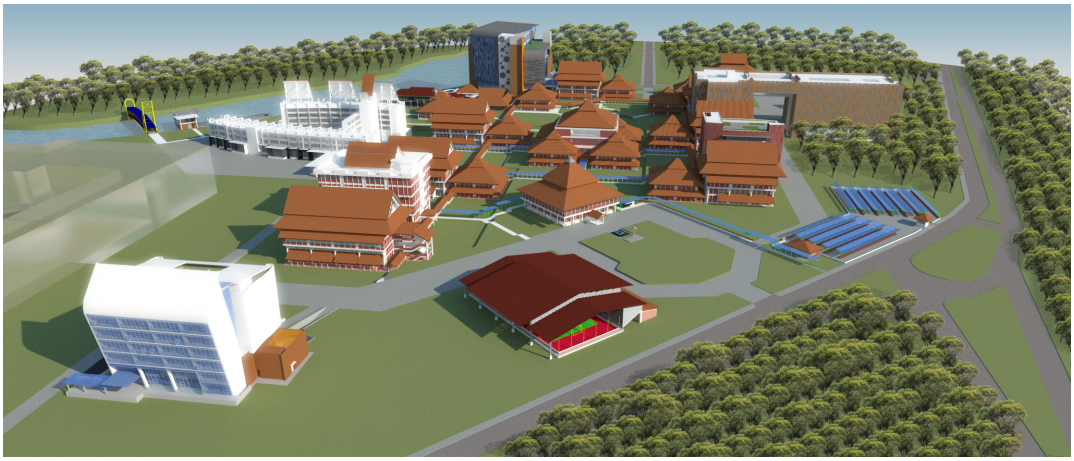
Romadhani Ardi, romadhani@ie.ui.ac.id (ST, UI; MT, UI; Dr, UDE, Germany) Production System, Production Planning and Inventory Control, Quality System, Advanced Modelling.

Shabila Anjani, shabila@ie.ui.ac.id (ST, UI ; MT, UI ; MBA, NTUST, Taiwan) Product Design, Cost Accounting, Sustainable Manufacturing and Innovation, Industrial Engineering Design, industrial Systems Design, Technology Entrepreneurship

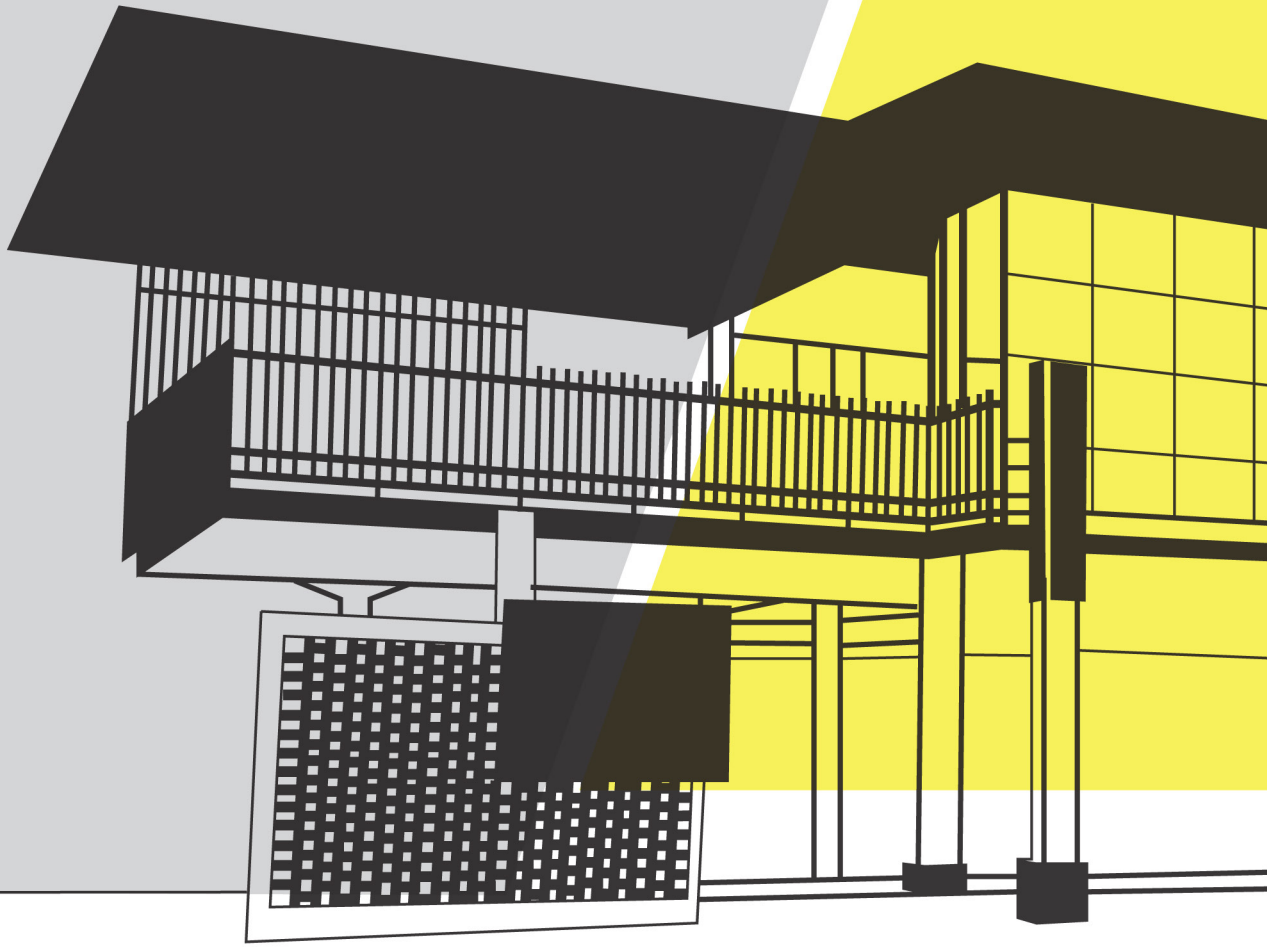
Sri Bintang Pamungkas, sri-bintang@ie.ui.ac.id (Ir., ITB; MSc.,University of Southern California, USA; Ph.D, Iowa state University, USA) Introduction to Economics, Finance and Investmens, Introduction to Mechanics and Electronics in Factory, Supply Chain Management, Industrial Policy.

Tegar Septyan Hidayat, tegar_ti08@yahoo.com (ST, UI ; MT, UI) Methods, Standards and Work Design, Macro Ergonomics, Human Factors in Industrial Design

Zulkarnain, zulkarnain@ie.ui.ac.id (ST, UI; MT, UI; Cand. Dr, Oulu Univ, Finland) Operations Reserach, Supply Chain Management.



ACADEMIC SYSTEM
AND REGULATION



2. ACADEMIC SYSTEM AND REGULATION

The educational system in the Faculty of Engineering, Universitas Indonesia refers to the prevailing system of education at Universitas Indonesia.

2.1. GENERAL

Teaching and Learning Activities
One semester is the time of the activity consisting of 16-18 weeks of lectures or other scheduled activities, including various additional activities such 2-3 week assessment activities. These teaching and learning activities are in form of lecture, lab, studio, exams, quizzes, assignments, presentations, seminars, research, practical work, industrial visits, and a thesis.

Semester Credits Units (SKS)
Education in the Faculty of Engineering, Universitas Indonesia is held in a variety of ways such as lectures, assignments (ex: calculation tasks, planning, design), practical work, seminars, lab, studio, and research for thesis writing. All educational activities that must be undertaken by each student to earn a bachelor's degree are contained within the academic loads and measured in units of semester credit (SKS).
Semester Credit is a measurement on the learning experiences obtained by students on each semester.
One Semester Credit in lecture, responses and tutorials, includes: face to face study time for 50 (fifty) minutes per week per semester; structured learning activities with structured assignments for 60 (sixty) minutes per week per semester; and independent study session for 60 (sixty) minutes per week per semester.
One Semester Credit in seminar or other similar subjects, includes: face to face study time for 100 (one hundred) minutes per week per semester, independent study session of 70 (seventy) minutes per week per semester.
One Semester Credit in practical training, studio, workshop, on the field training, research and community services, and /or other similar subjects for 170 (one hundred and seventy) minutes per week per semester.
Activities for one semester consist of 16-18 weeks of lectures or other scheduled activities and its additional activities. Also included in the schedule are two weeks of midterm examination and another two weeks for final examination.
All educational activities must be performed by each student to earn a bachelor's degree is an academic load of 144-145 credits divided into 8 (eight) semesters. Undergraduate students with an average study load of about 18-20 credits per semester are expected to undergo a week of minimal 18 -20 hours of scheduled interaction with a lecturer, 18-20 hours of structured activities, and 18-20 hours of independent learning activities.

Subjects

Subjects in the FTUI's undergraduate curriculum are grouped into University General Subjects (12,5%), Basic Engineering Subjects (15-20%), Basic Skills Subjects (30-35%), Core Subjects (35-40%). Subjects can be categorized as compulsory subjects and electives. They can be taken across departments or across faculties.

Grade Point Average
Grade Point Average or GPA is used to evaluate students' performance either for a particular semester in term of Indeks Prestasi Semester (IPS) or Semester Performance Index, or, cumulatively for all of the semester up to the most recent one in term of IndeksPrestasiKumulatif (IPK) or GPA. The formula used to calculate either IPS or IPK is as follows:

$$GPA = \left(\frac{\sum_{courses} (\text{Grade Point Value} \times \text{Semester Credit Unit})}{\sum_{courses} \text{Semester Credit Unit}} \right)$$

The summation made by multiplying the weight of credits with a letter grade for each course, divided by the number of credits.

Semester Performance Index / Indeks Prestasi Semester (IPS)
The Semester Performance Index is calculated from all subjects taken in each semester, except for subjects with letter grade of BS, I, and TK. Achievement Index that takes into account all of the subjects for a certain semester is called the Semester Performance Index (IPS) and used to determine the maximum academic load that the student may take in the upcoming semesters.

Grade Point Average (GPA/IPK)
If the calculation involves the entire grade point value of subjects taken during the educational program period, the result of the summation is a Grade Point Average (GPA) that is used as a basis for study evaluation. Courses taken into account are the ones listed in the Study Plan Form (FRS). GPA is obtained from the summation of all subjects having a grade of C or higher from the first semester until the last semester, with the exception of subjects with letter grade of BS, I, and TK.

Academic Performance Evaluation
Assessment of academic ability is performed on an ongoing basis by assigning tasks, homework, quizzes, or exams which are given throughout the semester. For each subject, there are at least two components of assessment which may include a midterm exam (UTS) and a final exam (UAS). A student will be assessed on his academic ability if he meets the following requirements:

- The courses taken have been registered and verified by Academic Advisor during the academic registration period.
- The student has fulfilled all of the administrative and academic requirements for the ongoing semester.
- The student has completed all of the required academic assignments.

Grades

At the end of each semester, students may download Semester Grade Record as a report on their academic performance from SIAK NG. Assessment of study efficacy is carried out using letters and academic load in accordance with Table 2.1.

Table 2.1. Grade Value and Points

Grade Value	Marks	Grade Point
A	85 - 100	4,00
A-	80 - < 85	3,70
B+	75 - < 80	3,30
B	70 - < 75	3,00
B-	65 - < 70	2,70
C+	60 - < 65	2,30
C	55 - < 60	2,00
D	40 - < 55	1,00
E	0 - < 40	0,00

The highest grade is A with grade point of 4.00 and the minimum passing grade of a course is C with grade point of 2.00. The instructor may assign the 'Incomplete' (I) grade if the student has not made a reasonable attempt to complete major session assignments, laboratory projects and the lecturer has made a reasonable effort to inform the student as early as possible that an important part of session work is incomplete. The 'I" mark should be changed to other grade within 1 month, otherwise, it will be automatically changed to 'E' grade. The "T" mark is given for no attendance in exam. The "BS" mark is given for Special Lecture (such as Internship, Seminar & Final Project) that has not been completed. These BS courses are not taken into account in the calculation of Semester Study Unit, IPS and GPA.

Length of Study and Academic Load

Undergraduate Program
The academic load a student can take is determined by the Academic Counselor based on the previous Semester Performance Index (IPS) as stated in the Study Plan Form (FRS). Students must take the entire allocated credits of the entire courses in the first and second semester. Academic Load for Undergraduate Program is 144 (one hundred and forty four) credits including final assignment and maximum academic load is 160 (one hundred and sixty) credits including final assignment and can be completed in minimum 7 (seven) semesters and maximum of 12 (twelve) semesters.

As for the second semester, these following rules apply:

- For students obtaining an IPS of 2.00 or less, they must take all credits load allocated for the second semester according to the structure of the applicable curriculum.
- For students obtaining an IPS of 2.00 or more, the maximum credits that can be taken follow that of the provisions in the Maximum Credit Load Table.
- From the 3rd semester onwards, the maximum credit loads that may be taken is determined by IPS of the previous semester and follow provisions in Maximum Credit Load as shown in Table 2.2 with respect to course prerequisites (if any). If necessary, Academic Counselor (PA) can add a maximum of 2 credits more than the provision in the Table through the approval of the Vice Dean.

Table 2.2. Maximum study load in a semester for undergraduate program

IPS	Maximum SKS
< 2,00	12
2,00 – 2,49	15
2,50 – 2,99	18
3,00 – 3,49	21
3,50 - 4,00	24

Master Program
Academic load in the FTUI's Master Program curriculum is 40-44 credits after finishing the undergraduate program with the following study period:

a. For Regular Master Program, the length of study is scheduled for 4 (four) semesters and can be completed in at least 2 (two) semesters and a maximum of 6 (six) semesters.
b. For Non-Regular Master Program, the length of study is scheduled for 5 (five) semesters and can be completed in at least 3 (three) semesters and a maximum of 7 (seven) semesters.

Academic Load for each semester is set by the Academic counselor (PA) based on the IPS of the last semester as stated in the Semester Grade list (DNS). Provisions on the academic load are as follows:

- A semester's academic load is registered by a student as he carries out online registration according to the pre-determined schedule. Students are required to take all subjects as allocated in the first semester curriculum.
- For students with less than a 2,5 IPS, a provision stating that the number of credits taken for the following semester does not exceed 9 credits is applicable.
- The maximum number of credits that can be taken on Master Program is 16 (sixteen) credits (for Regular Master Program) and 12 (twelve credits (for Non Regular Master Program) per semester.

Exemption from the provisions of academic load should be with the permission of the Vice Dean.

Matriculation for Master

The Matriculation Program is aimed to synchronize the students' ability to achieve the minimum requirements to continue in the Master Program in the Faculty of Engineering Universitas Indonesia. Matriculation is done by taking classes of subjects required by each Faculty/ Study Program within the Curriculum of Undergraduate Program. The allowed credit load for this Matriculation program is 12 (twelve) credits that can be completed in 1 (one) or 2 (two) semesters. Students are allowed to continue their study in the Master Program only if they passed all Matriculation subjects within the maximum of 2 (two) semesters allowed with a Matriculation GPA of 3,00 (three point zero).

Doctoral Program

Academic load in the FTUI's Doctoral Program curriculum is 48-52 credits after finishing the Master Program, including 40 credits of research activities. A semester's academic load is registered by the student through online academic registration during a pre-determined schedule. New students are required to take all subjects as allocated in the curriculum for the first and second semesters. Students must re-take research courses with a BS grade from previous semesters. Student's Academic Load for each semester is established by the Academic Advisor (PA) or the doctorate Promoter based on a discussion with the student from the doctoral program.

The length of doctoral program for all scheduled courses is 6 (six) semesters and in its implementation can be completed in at least 4 (four) semesters and maximum of 10 (ten) semesters. Students in the Doctoral Program may be granted an extension of study period up to a maximum of 2 (two) semesters if their study time have never been extended before, have achieved a minimum grade of B for Research Result Examination, and obtained a recommendation from their promoter and a guarantee that they will complete their study within the granted extended study period. The proposal for such extension is regulated through a Rector's decree based on proposal from the Dean/ Director of School.

Undergraduate Thesis / Final Project

Undergraduate Thesis is mandatory course for undergraduate students of Faculty of Engineering UI. The course is the application of science that has been obtained in accordance with the basic scientific disciplines that the student has studied, in the form of scientific paper, engineering design, assembly or models and accessories. Undergraduate thesis is mandatory to complete the requirements in order to earn a degree in the field of engineering. Undergraduate Thesis status is equivalent to other skill courses is tailored in accordance with the scope of each study program. Undergraduate Thesis must meet certain requirements, both academic and administrative requirements. Students are allowed to start composing undergraduate thesis if:

- The Undergraduate Thesis has been registered in the Study Plan Form [FRS]
- Students have obtained a minimum of 114 credits with a minimum of grade of C and have passed all mandatory courses both in the faculty and university level.
- Students have fulfilled all prerequisites set by the Study Program.

Undergraduate Thesis can be taken in both odd and even semester in the running academic year. On SIAK NG system, student must fill out the name of his thesis supervisor and the title of thesis which will be verified by the Vice Head of the Department. At the end of the semester, the Undergraduate Thesis supervisor will submit the student's thesis's grade to SIAK NG and change the title of undergraduated thesis (if necessary). The completed undergraduated thesis must be submitted in the form of hard-covered book and CD within the pre-determined time limit. The undergraduate thesis must first be assessed in an undergraduated thesis examination by the supervisor and examiners assigned by the Head of the Department.

Thesis (Master Program)

Thesis is a report of the results of research activities in the form of scientific writing. The thesis topic should be a summary of the subject matter that can be scientifically studied on the basis of the theory and use of certain methods. Thesis should be written in Bahasa with an English abstract. For Master program students who are given the opportunity to conduct research and thesis preparation abroad, they are allowed to write thesis in English with abstracts in the Bahasa, while still following the appropriate format stated in the Final Project Writing Guideline of Universitas Indonesia. Exemption of this rule applies only to study programs that hold a joint collaboration with university's abroad as stated in the charter of cooperation.

Requirements to start making Thesis are:

- Thesis has been registered in Study Plan Form [FRS] in every semester
- Students have passed courses with a load of 20 credits with a GPA≥ 3.00
- Head of the study program has set lecturer's name as a thesis supervisor.

Students are responsible for all thesis research costs. Students can actively meet with any of their lecturers as a potential supervisor, to request a thesis topic. In addition, in middle of the second semester, Head of the Study Program can start announcing thesis topics from which the students of the Master program could chose from to prepare the thesis proposal in the form of seminars. The Head of the Study Program announces a list of thesis supervisor who are assigned to guide the students in writing and finishing the approved topic. Thesis examination committee consists of Head of the committee, a minimum 3 or a maximum 5 examiners including the thesis supervisor. Responsible for the implementation of the thesis is the thesis coordinator in each department. Thesis counseling should be carried out with maximum of two people, Supervisor I and Supervisor II. Supervisor I should have a PhD or Master degree with a minimum of 5 years teaching experience and have expertise relevant to the student's thesis. Supervisor II should at least have a minimal master degree & have expertise relevant to the student's thesis.

Thesis can be submitted for a thesis examination when the thesis has met the following academic requirements:

- Thesis has been registered in Study Plan Form [FRS] in said semester
- The thesis has been declared eligible for examination by the Thesis Advisor
- Students have passed seminar examination and have met the requirements for thesis examination set by the study program.
- The thesis has been declared eligible for examination must be submitted to the Department to be listed in the examination schedule determined by the Head of the Study Program.
- Uploading of Summary of Undergraduate Thesis/Thesis/Dissertation

Dissertation

Dissertation preparation are done under the guidance and evaluation of Promoter with the following qualification: Full Time University Lecture; a Professor or Doctor with an academic title of Associate Professor; Have a relevant expertise with the Dissertation Topic; within the last 5 (five) years have written at least 1 (one) scientific paper published in an accredited national journal or a reputable international journal or 1 (one) other similar scientific work acknowledge by a team of expert appointed by the Academic Senate of Universitas Indonesia. Promoter may be assisted by a maximum of 2 (tow) co-promoters from within the university, partner universities, or other institutions in cooperation with the promoter team. Co-promoter must have the following qualification: a full time or a part time lecture or an expert from other institution; hold a minimum title of Doctor/Ph.D with an academic title of a minimum Senior Lecture; Have a relevant expertise with the Dissertation Topic.

Internship

Internship is an out-of-campus activity to apply the scientific knowledge in a real work situation. Requirements for Internship is set up by each department and is part of the total 144 SKS. Students must find the place to carry out their internship themselves and departments will help by issuing a formal letter requesting the on-the-job training position.

For the undergraduate double degree program, students are required to complete internship when they are in the partner universities. For example in Australia internship is one of the requirements set by the Institute of Engineers Australia (IEAust) to obtain accredited B.E. (Bachelor of Engineering) degree. Internship is a good opportunity for students to apply their skills and build networks in the industry. It is strongly suggested that students should do their Internship in partner universities. However, if they cannot do so it in partner universities, they are allowed to do it in Indonesia with prior permission from partner university.

Supplementary Exam

Students are allowed to take a Supplementary Examination for Mid Term and Final Examination the following condition: Sick, Grievance; or representing Universitas Indonesia in a Competition. Students with Sickness excuse are obliged to submit the application for Supplementary Exam signed by their parents/guardian and a Medical Certificate from Doctor or Hospital where they was treated; Students with Grievance or death in the family (death to Father, Mother, Older or Younger Siblings) are obliged to submit the application for Supplementary Exam signed by their parents/guardian; Students representing

Universitas Indonesia in a Competition are obliged to submit a Letter of Assignments/ Letter of Reference stating the Competition which they represented UI in. The Supplementary Exam can only be done by a written consent from the Vice Dean for Academic, Research, and Student Affairs of Faculty of Engineering Universitas Indonesia.

Credit Transfer

Credit Transfer is a recognition process of a number of credits a student may obtained from a university after an evaluation process by a Credit Transfer Team on each Faculty /School in a University. Students who have registered and study at an undergraduate study program or other equivalent education programs, both within the Universitas Indonesia or in any other universities or through a Student Exchange or Study Abroad program, may apply for a Credit transfer, provided that: (i) the transferred credits contain the same material with the courses listed in the curriculum for undergraduate program in FTUI, (ii) the academic record must be dated not more than a maximum of 5 years from the credit transfer application date, (iii) if the academic record are obtained from other universities outside of the Universitas Indonesia, the university should have at least a "B" accreditation from the National Accreditation Board for Higher Education or other international accrediting agencies. The maximum academic load that can be transferred in an Undergraduate Program is a maximum of 50 (fifty) percents of the total academic load that a student is required to complete in accordance to the curriculum of the study program he/she is currently studying. The courses transferred will be indicated with "TK" mark in the academic transcript.

Credit Transfer procedure are as follows: (i) Student submit a letter requesting Credit Transfer to the Head of the designated department, (ii) The Head of the Department will form a team to recommend which courses the student has previously taken can be transferred, (iii) Recommendation will be sent to the Dean of FTUI, (iv) FTUI Dean issues the Credit Transfer Decree, (v) The Faculty's Center of Administration assigned "TK" marks for all relevant courses in the student's SIAK NG account.

Credit Transfer for Parallel Class Students of Diploma Graduates

Starting in 2011, all extension programs in FTUI were merged into Parallel Classes in the Undergraduate Program. Diploma graduates who are registered as a student in these parallel classes, credits obtained from the previous diploma program will be transferred in blocks of 38 credits. Students begin their study in the third semester by taking all academic load according to package provided for the third semester. Afterward, they can take credits in accordance with their IPS in the following semester.

Study Abroad

There are many opportunities available for undergraduate students, both from Regular and Parallel programs to participate in Student Exchange program abroad, such as in Japan, Korea, Taiwan, Singapore, and many other countries. Student exchange programs generally last for 1-2 semesters and is supported with a full scholarship. Information on Student Exchange program can be obtained from the Universitas Indonesia's International Office, PAU Building 1st floor. Courses taken during the study exchange program are transferrable when they return to Universitas Indonesia. Thus, students are still able to graduate on time.

In addition, Undergraduate students can participate in Double Degree 2 +2 International Undergraduate program with FTUI's partner universities. Students participating in this program will spend the last two years studying at the partner university abroad and he will earn two degrees once he graduates. However, this Double Degree program offers no scholarships. Thus, participating students should ensure their availability of funds. Student participating in classes outside of the university (in the form of Student Exchange, International Undergraduate Dual Degree Program, Sandwich Program, Joint Degree Program, or other university acknowledge program) for at least one semester will be given an "overseas" or study outside of the university status. Before leaving to continue their study overseas, students must ensure that their status in SIAK NG has been change to "overseas", and they are obliged to make payment to Universitas Indonesia in the amount stated in the applied Rector's Decree of "overseas" academic fee. Period of study abroad, either on the Student Exchange program and the Double Degree, is counted as part of the whole study period. The result or grades obtained from this program will not be calculated in determining their GPA and will be given a letter grade of TK in their transcript.

Fast Track

FT UI students, Regular, Parallel or International Undergraduate Program, with brilliant academic achievements can participate in the Fast Track program. In this program, FTUI's undergraduate students in semesters 7 & 8 are allowed to take several Master program courses. Courses that can be taken and

other requirements are specified by the Study Program in a way that the students can directly pursue Master program in FTUI and complete the program in 1 year. Thus, the total time needed to complete both undergraduate and master programs is 5 years or 10 (ten) semesters.

The Academic load for the Fast Track Program curriculum is as follow:

a. For the undergraduate program is 144 (one hundred and forty four) credits including 16-22 credits of elective subjects taken from the main competence subjects of the Master Program.
b. For the Master Program is 40-44 credits including the 16-22 credits from subjects mentioned in point a above and are acknowledge through credit transfer.

If student is unable to complete his/her Undergraduate Program in 8 (eight) semesters, then the student will be deemed as unable to complete the Fast Track program, making all the subjects of the Master Program he/she has taken will be considered as an elective subjects in their completion of the Undergraduate Program and cannot be acknowledge as part of their credit towards continuing to the Master Program.

Requirements and Procedure for Fast Track Registration

Undergraduate students who are interested in participating in the Fast Track Program must fulfill the following requirements:

Having a minimum GPA of 3.50

Having a minimum Institutional TOEFL/EPT score of 500 (students may use the score from the EPT test they took as new student in FTUI)

Having a high motivation for research

Procedure for Fast Track Program:

Fast Track Program is open for all FTUI undergraduate study programs which have the same specialization with the Master programs (for undergraduate study programs that have specialization).

Students who are interested in participating in the Fast Track Program are required to fill out the Registration Form downloadable through the http://www.eng.ui.ac.id/index.php/ft/downloadindeks (titled: (FormulirPendaftaran Fast Track Magister FTUI).

Students registering for the BeasiswaUnggulan from the Ministry of Education and Culture selection are required to fill out the BeasiswaUnggulan registration form downloadable from the same web page.

The Fast Track Registration Forms will be evaluated by a team headed by the Head of Department.

If the student's application to participate in the Fast Track scheme is approved, they are required to counsel with his/her academic advisor for the finalization of his/her Undergraduate (S1) and Master (S2) Study Plan. The student's study plan for semester 7 and 8, especially for the undergraduate Elective Course selection must be in accordance with the Compulsory and Elective Courses in their respective Master study program in line with their specialization.

Undergraduate thesis and thesis of the student are expected to be of continuous research to maximize knowledge, experience and quality research result.

The funds for the Fast Track Program will be borne entirely by the student.

Registration Form for the Fast Track Program for each running Academic Year may be submitted to each Department Secretariat on March each year at the latest.

2.2. ADMINISTRATIVE AND ACADEMIC REGISTRATION

Academic Calendar

Administrative and academic schedules in FTUI are set in accordance with the administrative and academic schedules in Universitas Indonesia as follows:

Term 1 2016/2017 *)

Administrative registration in Universitas Indonesia
26 July – 25 August 2016

Academic registration in Universitas Indonesia
23 January 2017 - 3 February 2017

Course period
29 August 2016 – 23 December 2016

Mid-semester examination
17 - 21 October 2016

End of Semester Examination
13 - 23 December 2016

Deadline for grade assignment in SIAK-NG
5 January 2017

Departmental Judicium
1st, 1 November 2016
2nd, 11 January 2017

Faculty Yudicium
1st, 3 November 2016
2nd, 13 January 2017

Graduation
4 February 2017

Term 2 *)

Administrative registration in FTUI
23 January - 20 February 2017

Academic registration in FTUI
23 January 2017 - 3 February 2017

Course Period and examination
6 February 2017 - 26 May 2017

Mid-semester examination
27 - 31 March 2017 & 4 April 2017

End of Semester Examination
15 - 26 May 2017

Graduation
25 - 26 August 2017

Short Semester *)

Administrative Registration
2 - 9 June 2017

Academic Registration
19 May - 1 June 2017

Course period
12 June - 18 August 2017

Mid-semester Examination
17 - 21 July 2017

End of Semester Examination
14 - 18 August 2017

Note:
*) Schedules are subject to change

Note:
- Short Semester course period is held for 8 weeks, including mid-semester and final semester examinations.
- 2 credit courses consist of twice 2-hour contact per week, 3 credit courses consist of three times 2-hour contact per week, 4 credit subject consist of four times 2-hour contact per week.
- For regular undergraduate program: Faculty Basic Courses (Physics, Mathematics and Chemistry) are only available for students who wish to retake the course and have attended required lab activities.
- A student can take up to a maximum of 12 credits during the short semester.

- Courses offered are determined by the Department.
- If the number of students registered for a certain course in the Short Semester does not meet the minimum requirement, then the course will be canceled.
- Short Semester's tuition fee is not included in the normal tuition fee (BOP) and is calculated by the number of credits taken during the short term. Tuition fee for each credit is determined by FTUI.
- Payment for short semester courses must be made before the payment period is closed. Otherwise, the student's name will be automatically removed and the student is no longer considered as a participant in the short semester.

Registration and Course Guidelines

Before administrative registration takes place, FTUI publishes an academic calendar for one semester listing schedules for courses, mid-term, final-term examinations and other academic activities. The academic calendar and course schedule could be accessed at http://www.eng.ui.ac.id, and SIAK NG.

Administrative Registration

Administrative Registration includes payments of tuition fee and admission fee. Students are responsible for paying fees by the payment deadline. Students who do not complete the registration process by the payment deadline will not be registered at that particular semester will be included toward student's allowed length of study. Administrative registration are done by paying the tuition fee through the host-to-host system by the ATM (Automated Teller Machine) or bank teller of banks in cooperation with the Universitas Indonesia.

Academic Registration
Students should do online academic registration; consult with his/her Academic Advisor for approval and signing the Course Plan Form or FormulirRencanaStudi (FRS) during the academic registration period. The main duties of Academic Advisor are:

- Helping and directing students in their study plan particularly in selecting courses and in solving their academic problems
- Monitoring and evaluating student's academic performance during their period of study.

Students should logon to https://academic.ui.ac.id using username and password provided by the Office of PengembanganPelayananSistemInformasi (PPSI) UI. Students could get their username and password at PPMT (PusatPelayananMahasiswaTerpadu) building. Students could also download course schedules and academic calendar from the website.

After completing the online FRS, students should print the form (3 copies) and meet their PA to discuss, verify and validate the courses taken. Students have to check their FRS after registration period to ensure that the courses taken are correct. Fines will be levied to students for late administrative and academic registration, as per the university or the faculty regulation.

Sanctions

1. Students who do not carry out the administrative registration will receive inactive status as a student in the current semester, which is included as their length of study.
2. Students who do not carry out academic registration cannot follow the academic activities in the current semester, which is included as their length of study.
3. Students who are not active as referred to in points (1) are not charged with tuition payments.
4. Students who do not carry out the registration and administration of academic registration 2 (two) consecutive semesters, expressed as a university student resigned without notice from the university.
5. Active students who do not complete the payment in accordance with the agreement until the end of the semester goes imposed the fine of 50% of the unpaid amount.
6. Payment of fines referred to in points (5) shall be paid at the following semester Academic Registration

Exception Administrative Registration

When non-active students, with all reason intend to maintain their status as active students, they have to follow the procedure of administrative registration:

- Obtain the approval from FTUI by filling out a form available at PAF (Pusat Administrasi Fakultas/ Faculty Administrative Center).
- The students must come to the Directorate of Finance UI to obtain the approval for paying the tuition fee after paying the penalty 50% from the tuition fee on the current semester.
- The approval will be used by the students for paying the tuition fee manually.
- Students must give the copy of the payment record to the Directorate of Finance UI for verification.

Prerequisite Courses
These courses can only be taken if a student is currently taking or has previously taken and passed the prerequisite course with sufficient grade [not T].

Requirements for Transfer to Partner Universities in Australia for Double Degree Program

Minimum requirement of GPA and English before transferring to Partner University is listed in Table 2.3. Eligible students can continue their study to partner universities in Australia if they fulfill the following requirements:

1. Achieve minimum GPA as required at the end fourth semester for the 2+2 program;
2. Passed all required subjects as listed in the Study Program curriculum with minimum C with a total of passed credits consistent with the total number of credits listed in the Study Program curriculum for semester 1-4.
3. Achieve minimum IELTS or TOEFL scores as required.
4. If GPA less than required, the students must stay at UI and repeat some subjects to improve their GPA, while administratively and academically registered at FTUI.
5. If GPA meets minimum requirement, but IELTS or TOEFL scores less than minimum requirement, they are suggested to improve their IELTS or TOEFL score in Indonesia and maintain administrative registration at FTUI. Other choice is to take English for Academic Purposes (EAP) at the partner university. Information on duration and schedule of EAP can be found at the partner university's website.

Table 2.3. Minimum requirement of GPA and IELTS or TOEFL for transfer to the Partner Universities

Partner University	Minimum GPA	Minimum IELTS / TOEFL
QUT	3.0	IELTS min. 6.5 with no band lower than 6 IbT min 90 with no band lower than 22
Curtin		
UQ		
Uni Sydney		
Monash	3.2	

English Language Requirements for Undergraduate International Program Single Degree

Students of the Undergraduate International Program Single Degree (class of 2012 and after) are obligated to obtain an English certificate in IELTS (International English Language Testing System) or TOEFL iBT (Test of English as a Foreign Language –internet Based Test) with the following minimum score:

Type of Test	Overall Minimum Score	Additional Requirements
IELTS	6.5	No bands lower than 6.0
TOEFL iBT	80	No bands lower than 20

This English Language Certificate is one of the requirements before they may proceed to have their Undergraduate Thesis/ Final Project Exam. The date of said English Language Certificate is taken at least during their third semester of study.

Procedure for Study Abroad/ Student Exchange to Partner University for Undergraduate International Program Single Degree

1. Student choose a Partner University • Find out list of UI's Partner Universities • Information on Study Abroad/ Student Exchange Information from International Office UI through http://international.ui.ac.id
2. Student contacted the selected partner University for Information on: • List of subjects offered and course description • List of requirements/documents needed. • Application and Tuition Fees. • Other Documents needed.
3. Student consulted their Academic Guidance Counselor or the Vice Head of Department to determine the subjects they will take in Partner University that can be credit transferred upon their return.
4. The Head of Department issued a Letter addressed to the Vice Dean stating: • Name and Student ID of student participating in the Study Abroad/Student Exchange Program • Name of Partner University and length of study of said program • List of subjects that the students will take at Partner University.
5. The Vice Dean will assigned the Associate Dean for Academic and Head of PAF to process the student's status to "overseas" or "student exchange and issued a Reference Letter and Academic Transcript for the student.
6. Student prepare the documents needed for their Study Abroad/ Student Exchange: • Application Form • IELTS/TOEFL iBT • Other language requirement • Reference Letter and Academic Transcript from the Faculty.
7. Student sends their application documents to Partnery University.
8. Student receives Letter of Offer dan Letter of Acceptance from Partner University.
9. Student makes payment and signed the Letter of Offer
10. Student applies for Student Visa to the Country where the Partner University is located.
11. Departure to Partner University

2.3. GRADUATE PREDICATE

Students are considered to have passed the undergraduate program and earned a Bachelor Degree (S.T or S.Ars) if they are: registered as an active student in Universitas Indonesia during said semester both administratively and academically; have passed all the mandatory courses and acquired a minimum of 144 credits in accordance with the applicable curriculum with "C" as the lowest grade and completed all 8 semesters scheduled academic load within 8-12 semesters; completed all administrative obligation including the return of all borrowed library and laboratory collection; and complete all obligation of their study period and/or all assignments given in accordance to the curriculum of the Study Program (including revised Final Project) with a GPA ≥ 2,00 (two point zero). Honor predicate for graduates are determined by the student's final GPA as follow: Cum Laude (3.51 – 4.00), Very Satisfactory (3,01 – 3,51), and Satisfactory (2,76 – 3,00). For an undergraduate student to earn the Cum Laude degree, he must finished his study within 8 (eight) semesters time without retaking any courses.

Students are considered to have passed the Master program and earned a Master of Engineering or Master of Architecture Degree if they have passed all the required 40 – 42 credits, a ≥ 3.00 GPA

with "C" as the lowest grade and do not exceed study period and have met all administrative requirements. Honor predicate for graduates are determined by the student's final GPA as follow: Cum Laude (3.71 – 4.00), Very Satisfactory (3.41 – 3.70), and Satisfactory (3.00 – 3.40). For a Master program student to earn the Cum Laude degree, his length of study must not exceed 4 (four) semesters time without retaking any courses.

Students are considered to have passed the Doctoral program and earned a Doctor Degree if they have passed all the required 48 – 50 credits, a minimum GPA of 3.00 with a minimum "C" for in-class courses and a minimum "B" for research courses, do not exceed study period and have met all administrative requirements. Honor predicate for graduates are determined by the student's final GPA as follow: Cum Laude (3.71 – 4.00), Very Satisfactory (3.41 – 3.70), and Satisfactory (3.00 – 3.40). For a Doctoral program student to earn the Cum Laude degree, his length of study must not exceed 6 (six) semesters time without retaking any courses. The mark "BS" is not counted as course repetition. If a student's final GPA is within the 3.71 – 4.00 range but he fail to meet the other requirements, he will be awarded the "Very Satisfactory" predicate.

2.4. ACADEMIC PERFORMANCE EVALUATION AND DROPOUT CRITERIA

Undergraduate Program

The university also requires that students maintain satisfactory academic performance during their study at FTUI and meet the following evaluation criteria to be able to continue their studies:

- Attain at least 24 credits with a minimum of C at the end of their second semester;
- Attain at least 48 credits with a minimum of C at the end of their fourth semester;
- Attain at least 72 credits with a minimum of C at the end of their sixth semester;
- Attain at least 96 credits with a minimum of C at the end of their eight semester;
- Attain all required credit with a minimum of C at the end of their twelfth semester;

Or:

- Have the following problem: have an inactive status (empty) for two semesters in a row thus being declared as "resign" automatically from the status of Universitas Indonesia's student by the Rector's decree on Status Determination.
- Proven to be in violation of rules or regulations that caused the student to lose his right as FTUI students.
- Deemed unfit to continue their study based on consideration from a team of Doctors appointed by the Head of the University.

Student who still maintain satisfactory academic performance and meet the evaluation criteria to continue his study but would like to resign on his own free will may submit a written application to the Dean with a copy to the Head of the Department.

Master Program

The Maximum length of study to earn a Master Degree in FTUI is at the latest 6 (six) semesters, starting from registration time to graduation. This provision also applies to students who enroll in the FTUI Master program with a "probation" status. Students will lose their right to continue the study (dropping out) if:

- Students fail to achieve a 3.00 GPA of at least 14-18 passed credits (for regular Master Program student) or 12-14 passed credits (for non-regular Master Program student) at the end of the second semesters;
- In the end of the study period evaluation, students fail to achieve the following graduation requirements: registered as an active student in Universitas Indonesia during said semester both administratively and academically; not exceeding the maximum length of study; completed all administrative obligation including the return of all borrowed library and laboratory

collection; and complete all obligation of their study period and/or all assignments given in accordance to the curriculum of the Study Program (including revised Final Project) with a GPA ≥ 3,00 (three point zero)
- Students who do not register academically and administratively for two consecutive semesters.
- Proven to be in violation of rules or regulations that caused the student to lose his right as FTUI students.
- Deemed unfit to continue their study based on consideration from a team of Doctors appointed by the Head of the University.

Student who still maintain satisfactory academic performance and meet the evaluation criteria to continue his study but would like to resign on his own free will may submit a written application to the Dean with a copy to the Head of the Department.

Doctoral Program
The Maximum length of study earn a Doctoral degree in FTUI is 10 (ten) semesters, starting from registration time to graduation.

Students of the Doctoral Program (Class and Research) will lose their right to continue to study (dropping out) if:
- Students who do not register academically and administratively for two consecutive semesters will be automatically considered to have resigned from UI.
- Failed to obtain a minimum of B for their Research Proposal Examination or similar exam at the end of their fourth semester;
- Failed to obtain a minimum of 50 (fifty) percent for their Research based on the judgment of the promoter team at the end of their sixth semester;
- Failed to obtain a minimum of 75 (seventy five) percent for their Research based on the judgment of the promoter team at the end of their eight semester;
- Failed to obtain the following by the end of their study period of ten semesters: produce 1 (one) scientific paper based on research for their dissertation as main writer that can be accompanied by the promoter team and has been accepted to be published in an indexed international journal (8 credits); submit proof of compliance of requirements as stated before as part of the requirements for promotion exam; submit 1 (one) Dissertation and participate in a Promotion Exam as the final step of the Doctoral Program (6-8 credits).
- Exceeded the maximum length of study (10 semesters).
- Proven to be in violation of rules or regulations that caused the student to lose his right as FTUI students.

Student who still maintain satisfactory academic performance and meet the evaluation criteria to continue his study but would like to resign on his own may submit a written application to the Dean with a copy to the Head of the Department.

Students of the Doctoral Program (Research) will lose their right to continue to study (dropping out) if:
- Students who do not register academically and administratively for two consecutive semesters will be automatically considered to have resigned from UI;
- Failed to obtain a minimum of B for their Research Proposal Examination or similar exam at the end of their fourth semester;
- Failed to obtain a minimum of 50 (fifty) percent for their Research based on the judgment of the promoter team at the end of their sixth semester;
- Failed to obtain a minimum of 75 (seventy five) percent for their Research based on the judgment of the promoter team at the end of their eight semester;
- Failed to obtain the following by the end of their study period of ten semesters: produce 1 (one)

scientific paper based on research for their dissertation as main writer and be presented at an international scientific conference and published in the proceeding as a full paper (6 credits); produce 1 (one) scientific paper based on research for their dissertation as main writer that can be accompanied by the promoter team and has been accepted to be published in an indexed international journal (8 credits); submit 1 (one) scientific paper that has been accepted to be published in a nationally accredited journal; submit proof of compliance of requirements as stated before as part of the requirements for promotion exam; submit 1 (one) Dissertation and participate in a Promotion Exam as the final step of the Doctoral Program (6-8 credits).

- Exceeded the maximum length of study (10 semesters).
- Proven to be in violation of rules or regulations that caused the student to lose his right as FTUI students.

Student who still maintain satisfactory academic performance and meet the evaluation criteria to continue his study but would like to resign on his own may submit a written application to the Dean with a copy to the Head of the Department.

2.5. ACADEMIC LEAVE

Student who wishes to be away from his/her academic endeavors at FTUI for one to two semesters, but intend to return to FTUI are eligible for academic leave of absence. Leave of absence could be only given to student who has studied at least two semesters at FTUI, unless with specific circumstances. Academic leave for special circumstances are academic leave that is given to students for an unavoidable hindrance, such as: state task, university task, or undergoing medication which prohibited said student to participate in academic activity. Academic leave is not counted as part of the length of study.

Procedures of Academic Leave

1. To obtain academic leave, a student must write a letter requesting for academic leave to the Dean before the beginning of the administrative registration period of semester.
2. If the academic leave is approved, PAF will change the status of the student as academic leave before the beginning of the administrative registration period of semester and the amount of tuition fee will automatically be changed.
3. The student must pay 25 % of tuition fee during the period of administrative registration of the intended semester.
4. If a student has been granted an academic leave but fail to pay the obligated fee due to them during the registration period, the academic leave will be canceled and the student status will revert to inactive (empty).
5. In the situation as stated above, if the student still insist on making payment after the registration period has passed, the student will be charged with a late administration registration fee in the amount stated in the regulation issued in the Rector's Academic Fee.
6. If the students fail to pay during the prescribed period of administrative registration, Exceptional Administrative Registration will apply.
7. If the Academic Leave is proposed not accordance with point (1) above, or is proposed after the semester is on, the student should pay full amount (100 %) of tuition fee.

2.6. FACULTY and DEPARTMENT JUDISIUMS

Judisium is a meeting held at both the Faculty and the Department level to decide whether a student has fulfill all academic requirements and may graduate and earn a degree in engineering based on the Department / Faculty Evaluation.

2.7. SEMESTER GRADE TRANSCRIPT, DIPLOMA and ACADEMIC TRANSCRIPTS

FTUI Central Administration Office is responsible for issuing Semester Grade Transcript, Diploma

and Academic Transcript for all FTUI's graduates. Student Academic History is issued based on student's request while the diploma and academic transcripts are issued only once at the time of the student's graduation. Contained within the Student Academic History and Academic Transcript are name, course code and grades of all courses that the students took during their study period. Also included is the student's Grade Point Average (GPA) which is calculated based on all courses' grades. Diplomas and Academic Transcripts will be handed to all graduates no later than 2 (two) months from the date of graduation.

The Semester Academic Transcript (DNS) gives the information on the student's identity (name, student ID and latest education), Academic Advisor, Faculty, Study Program, Specialty, Education Level, Subject Code, Subject Title, Credit, Letter Grade, Semester GPA, and GPA. The Semester Academic Transcript can be issued as hard copy based on a student request as required. A valid DNS is signed by official handling the academic administration in the Faculty level.

Academic Record recorded chronologically all academic activity of a student since they first registered as a student until they are no longer registered, due to graduation, drop out, or resignation. The academic status of a student of each semester is recorded in the Academic Record. The Academic Record is also used as a source of information for student, Academic Advisor, and Study Program to the success of a student study and is issued as required based on the student's request and validated by the Vice Dean of the Faculty.

Academic Transcript is given to student that has been declared as a graduate from a Study Program which is decided in a graduation determination meeting and contained information on a student identity (name, student ID, place and date of birth), previous education, education level, study program, specialty, list and code number of subjects, letter grade, number of required credits, number of obtained credits, GPA, title of the student's Final Project, diploma number and year of graduation. All subjects taken by the student, including repeated subjects and transfer credit subjects, are included in the Academic Transcript which is issued in two language, Bahasa Indonesia and English. The Academic Transcript will be given to students with no arrears of tuition fees.

Diploma is given to student that has been declared as a graduate from a Study Program which is decided in a graduation determination meeting. Diploma contained information on the identity of the diploma holder (name, place and date of birth), academic title, name and signature of the Rector and Dean, date of diploma issued, date of graduation, student ID, diploma number and signature and photo of the diploma holder. In the event that the diploma is lost or damaged, the diploma holder is allowed to request a copy of the diploma. Dean/ Vice Dean/ Director of Academic on behalf of the Rector may signed to validate a copy of diploma. Diploma will be given to students with no arrears of tuition fees.

2.8 OFFENSES AND SANCTIONS

In any particular courses, no students shall engage in any form of unethical or improper conduct, such as but not limited to examination offenses:
Utilizing unauthorized materials/notes to enhance performance during on examination.
Attempting to observe the work of another student.
Taking an examination for another person, or permitting someone else to do so.
Collaborating improperly by joint effort on discussion in anyway expressly prohibited by lecturer.
When incidents, as enumerated above occurs, the following sanctions may be imposed (as per FTUI regulation):
The student may be assigned E for the subject in question
The student may be suspended for one semester
The student may be dismissed or expelled by FTUI
If necessary, a meeting of PanitiaPenyelesaianPelanggaran Tata Tertib (Offence Settlement Committee) (PT32) may be held.

Academic Sanction for Perpetrators of Academic Cheating In Exams

a. Academic sanction in the form of the cancellation of said exam (E grade) for student caught or proven committing academic fraud in examination process, such as working with other student, copying other student's work or giving answer to other student;
b. Academic sanction in the form of study period cancellation (for all subjects) for said semester

for student caught or proven committing academic fraud in examination process such as opening books, notes or other equipment planned before;

c. Academic sanction in the form of cancellation study period for said semester and one semester suspension for student caught or proven committing academic fraud in examination process due to working together with outside person(s) outside of the examination room;
d. Academic sanction in the form of expulsion from the Faculty of Engineering Universitas Indonesia (expelled) for student caught or proven committing academic fraud in the examination process by replacing other examinee or by having someone else take their place;
e. Academic sanction in the form of expulsion from the Faculty of Engineering Universitas Indonesia (expelled) for student caught or proven committing academic fraud in the examination process for planning and carrying out the plan to help other examinee;
f. Other academic fraud will be handled through a hearing by the Committee of Rules and Conduct Regulation Violation (Panitia Penyelesaian Pelanggaran Tata Tertib (P3T2)) Faculty of Engineering Universitas Indonesia;
g. Student is entitled to an appeal with the help of their Academic Advisor and the Vice Dean for Academic, Research, and Student Affairs Faculty of Engineering Universitas Indonesia, submitted to the Faculty Academic Senate in the quest of justice.

Academic Sanction on Plagiarism and Act of Fraud in the Completion of Final Project

Plagiarism is an act of stealing ideas or thought already available in written and/or someone else's writing and used them as if it is our own ideas, thoughts and/or writing thus causing harm/loss to the original owner both material or non material, this plagiarism can be in the form of using a word, phrase, sentence, paragraph, or even a chapter of someone else's writing or book, without stating the source. Included in this is the auto plagiarism.
Auto Plagiarisme is an act of using an idea or thought repeatedly in writing or using someone's own writing in parts or whole without stating the origin published source as if those ideas or thoughts are a new idea, thought and/or writing.

Plagiarism criteria used as a based to decide a sanction focuses on the amount of idea or phrase stolen and how similar the writing in phrase, sentence, paragraph, section, chapter, and the writing as a whole. A work can be considered plagiarism if based on the verification result on the writing contained a similarity level of 35% or more with the original work. To prevent plagiarism, student is obligated to check their final work using software of anti plagiarism provided by the Faculty or University before submitting their work to their advisor/promoter/co-promoter. If such software is unavailable, student is required to check existing list of research in connection to the topic of their research and state such research in their reference of research. Student caught and proven of committing plagiarism is entitled to an appeal tried in the Study Program level to the Faculty which the Faculty will later passed on to the university through the P3T2 to be verified and processed.

In case of an active student, early sanction can be in the form of delaying the final project examination or delaying the graduation status for student who has been declared passing the final project examination. Student that has been declared as a graduate but have not received their diploma, with the approval of the Rector, the Dean may hold said student diploma while await the Rector's final decision. Academic sanction on plagiarism for active student is established through the Dean's decree based on the proposal by the Head of the Study Program or recommendation from the Faculty in one month at the latest since the date of the proposal letter was accepted by the Dean. For graduate student is established through the Rector's Decree based on the P3T2 recommendation. The heaviest academic sanction given can be in the form of cancellation of the student final project (for active student) with the obligation to write a new final project with new topic, while for graduate student the sanction is in the form of revocation of academic titles.

The act of fraud in the writing of Final Project, Essay as Exam Substitute, or Assignment, includes the usage of other person's service/ replacement/ consultant/ or other service to complete assignments in the name of said student and other manipulative act of fraud. This act does not include the usage of service for data collecting, survey, and data processing for the completion of final project of student. Sanction given to the perpetrator of said act of fraud in the completion of final project is established throught the Dean's decree issued in one month at the latest since the proposal letter from the Head of Study Program is received by the Dean. The heaviest academic sanction given can be in the form of cancellation of the student final project (for active student) with the obligation to write a new final project with new topic, while for graduate student the sanction is in the form of revocation of academic titles. Active students who consciously act as a ghost writer in writing the final works for other students will be given the equivalent of student academic sanction given to the perpetrators of acts of fraud.

2.9. ACADEMIC REGULATION OF THE UNIVERSITAS INDONESIA

List of Academic Regulations at Universitas Indonesia can be accessed via http://resipotory.ui.ac.id.

Below is a list of Decrees that functioned as reference for education program at Universitas Indonesia

GENERAL:

Decree of the Board of Trustees Universitas Indonesia
Number: 008/SK/MWA-UI/2004 on the Amendment of Board of Trustees' Decree Number: 005/SK/MWA-UI/2004 on the Code of conduct on Campus Life in Universitas Indonesia

EDUCATION:

Decree of the Rector Universitas Indonesia
Number: 285/SK/R/UI/2003 on the Implementation Guidelines for Cross-Faculty Lectures in Universitas Indonesia

Decree of the Board of Trustees Universitas Indonesia
Number: 006 / MWA-UI/2004 on the Universitas Indonesia's Academic Curriculum

Decree of the Rector of Universitas Indonesia
Number: 491/SK/R/UI/2004 on Universitas Indonesia Education Activities Conclusion Regulations

Decree of the Board of Trustees Universitas Indonesia
Number: 001 / TAP/MWA-UI/2005 on the Establishment of Academic Degrees in the Universitas Indonesia.

Decree of the Board of Trustees Universitas Indonesia
Number 003 / TAP/MWA-UI/2005 on General Guidelines for Implementation on Universitas Indonesia's Professional Programs

Regulation of the Board of Trustees Universitas Indonesia
Number: 006 / Peraturan/MWA-UI/2005 on Student Learning Outcomes Evaluation at Universitas Indonesia

Regulation of the Board of Trustees Universitas Indonesia
Number: 007 / Peraturan/MWA-UI/2005 on Academic Education Implementation Norms in Universitas Indonesia

Regulation of the Board of Trustees Universitas Indonesia

Number: 008 / Peraturan/MWA-UI/2005 on Professional Education Curriculum Norms in Universitas Indonesia

Decree of the Rector of Universitas Indonesia
Number: 838/SK/R/UI/2006 on Administration of Universitas Indonesia Student's Learning Outcomes

Decree of the Rector of Universitas Indonesia
Number: 012/SK/R/UI/2007 on Implementation of the of Students Learning Activity in Universitas Indonesia

Decree of the Rector of Universitas Indonesia
Number: 450/SK/R/UI/2008 on the Implementation of E-Learning in the University Indonesia

Decree of the Dean of Faculty of Engineering Universitas Indonesia
Number: 290/D/SK/FTUI/VI/2013 on the English Requirements for Undergraduate International Program Single Degree Faculty of Engineering Universitas Indonesia.

Decree of the Rector of Universitas Indonesia
Number :014 year 2016 on the Implementation of Undergraduate Program in Universitas Indonesia

Decree of the Rector of Universitas Indonesia
Number :015 year 2016 on the Implementation of Master Program in Universitas Indonesia

Decree of the Rector of Universitas Indonesia
Number :016 year 2016 on the Implementation of Doctoral Program in Universitas Indonesia

Decree of the Dean of Faculty of Engineering Universitas Indonesia
Number: 622/D/SK/FTUI/IX/2016 on Academic Sanction for Academic Fraud Perpetrator in Faculty of Engineering Universitas Indonesia.

Decree of the Dean of Faculty of Engineering Universitas Indonesia
Number: 623/D/SK/FTUI/IX/2016 on General Regulation on Supplementary Exam for Mid Term and Final Examination in Faculty of Engineering Universitas Indonesia.

Decree of the Dean of Faculty of Engineering Universitas Indonesia
Number: 624/D/SK/FTUI/IX/2016 on Academic Sanction for Plagiarism and Act of Fraud in the Completion of Final Project in Faculty of Engineering Universitas Indonesia.

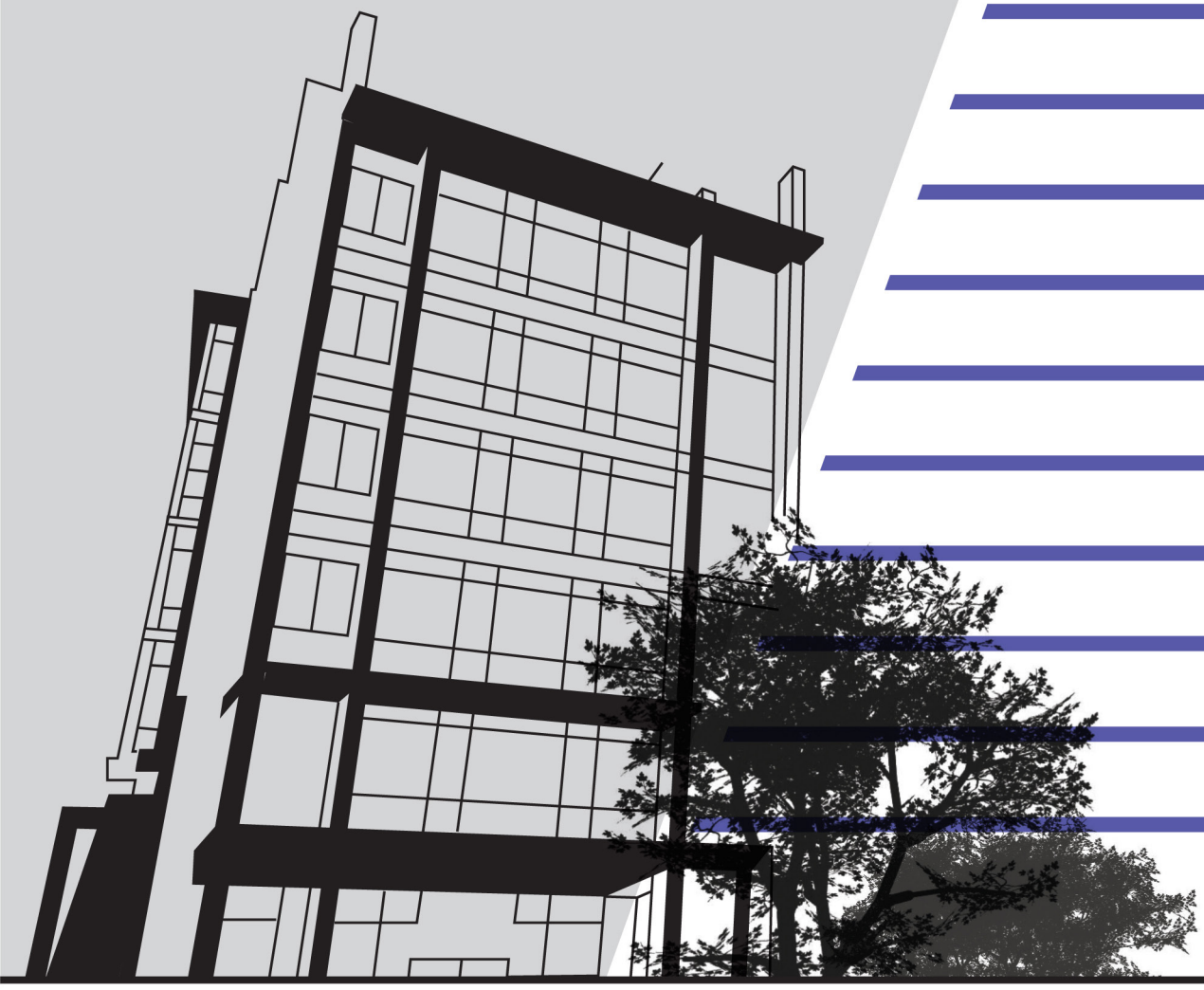
RESEARCH

Decree of the Board of Trustees Universitas Indonesia
Number 002/SK/MWA-UI/2008 on University's Research Norms

Decree of the Board of Trustees Universitas Indonesia
Number 003/SK/MWA-UI/2008 on Research Policy at Universitas Indonesia

Decree of the Board of Trustees Universitas Indonesia
Number 009/SK/MWA-UI/2008 on amendment of the Decree of the Board of Trustees of Universitas Indonesia Number 003/MWA-UI/2008 on Research Policy in Universitas Indonesia

FACILITIES
AND CAMPUS LIFE



3. FACILITIES AND CAMPUS LIFE

NEW FACILITIES AVAILABLE IN FTUI

1. All classrooms in S building are now having one special chair for each classroom dedicated to left handed students.
2. FTUI has renovated the S405 classroom into a specially design discussion room for students to learn and discuss in groups in the implementation of Student-Centered Learning (SCL). This renovation is partly funded by USAID through their PEER Science research program by providing chairs, computer screen for each discussion group, wireless LCD projector and documented camera. The renovation is completed by the start of the Odd Semester of 2015. The class room will be able to accommodate up to 80 students in groups discussion form as in problem-based learning (PBL) or Collaborative Learning (CL) and up to 100 students in class room form
3. Online Electricity Metering and Monitoring System now help FTUI in monitoring electricity usage of each building and their characteristic. www.ee.ui.ac.id/power; www.eng.ui.ac.id/power
4. Offline Water Metering and Monitoring System prepare FTUI in determining the water usage of each building and help plan the creation of rain water well within the faculty.
5. Smoking is prohibited throughout most of the faculty areas. However, the new and vastly improved Smoking Shelter is now available in the student's cafeteria area and in front of the S Building.
6. Starting from April 2012, we have started to tests all of our cafeteria vendors for E-Coli. Working together with the Faculty of Public Health, we conducted several Hygiene tests to our vendors. Between these tests we also conducted seminars, socialization, and counseling to all of our food vendors regarding the level of cleanliness and hygiene level expected from them. We also improved the sewer, sink and the vendor's facilities to achieve the desired effect. By February 2015, all food vendors in our Student's Cafeteria are 100% free of E-Coli, Salmonella and Borax. Thus, making us proud to say that FTUI's Students' Cafeteria is one of the healthiest in the university.

3.1. INTEGRATED STUDENTS SERVICE BUILDING (PPMT)

This building is located at the left of the Rector building with the one door policy in serving the registration process of all Universitas Indonesia students, whether they are vocational, undergraduate, undergraduate extension, master, doctoral, specialist, and professional students. This building consists of three divisions: PPSI division, Student Affairs division, and Academic division.

3.2. FACULTY ADMINISTRATION CENTER (PAF)

Academic administrative services for all academic programs in FTUI are managed by PAF. The services provided for students include academic records, change of grades from lecturers, testamur and academic transcripts, registration, absence of leave, enrollments and letter of reference letter. The working hour is at 08.00 to 16.00 from Monday to Friday, at PAF building.

3.3. UNIVERSITY CENTRAL LIBRARY

Location : Kampus UI Depok
Service hours of UI Central Library

Monday - Friday	08.30 - 19.00 WIB
Saturday & Sunday	08.30 - 15.00 WIB
Holly Month of Ramadhan	08.30 - 15.00 WIB

Membership:

Students, lecturers, researchers and employee of the Universitas Indonesia are entitled for membership of the central library with the following requirements:

1. Provide the latest semester payment proof or the latest study card (IRS) or certification letter from any faculty, unit or department within the Universitas Indonesia.
2. Provide a 2x3 photo (one)
3. Provide a cover letter from the faculty (for lecturers)

Lending Procedures:
- General text books can be borrowed for two weeks (max. 3 books) by showing your Student Card. Borrowed books need to be stamped.
- Reference books, magazines, newspaper and thesis can only be read on the spot or photo-copied.
- Dissertation and thesis can only be photocopied as many as 10 pages.

UI Central Library Services

Reference Service
This service is provided to help the UI civitas academica in searching information, especially for students who are working on their final assignment or research. Information search request may be submitted in person or via email (reflib@ui.ac.id).

Information Package
Information package is a form of service in the form of certain topics of information packages. Each package consists of several articles and their annotation in accordance to the selected topic. Each article can be obtained by contacting the reference division first (reflib@ui.ac.id) or by direct phone request (+6221-7270751).

Information Search Training
The information search training consists of several packages. They are: basic and advance package. This training is provided to help improve the information skill of library visitors and members. This service is available to all university members, especially new students and students who are in their final year. Request for training can be submitted directly or through the email perpusui@ui.ac.id

Circulation (Borrowing Books)
The circulation services are located in level 1
The library's collection of reference books, thesis, dissertation, research reports and UI-ana can only be read on the spot at the UI Central Library.

UI Central Library Facilities
OPAC (Online Public Access Catalog)
OPAC is a tool to search the information regarding the available collection of the library by using a terminal computer. OPAC computers are available on every floor of the library.

Internet Access
Internet access connection at the UI central library uses the integrated network (JUITA – Jaringan Terpadu) and can also be accessed by using the UI Hotspot. Internet service is also available at the first floor of the central library. Also available are computers with internet access for the usage of library visitors and members.

Computer, Scanner and Data Backup
Students are allowed to use the provided computers to work on their assignments, picture/photo scanning and to burn the result of their information search to a CD.

Photocopy
A photocopy machine is available at the UI Central Library

Discussion, Class and Seminar Rooms
Discussion, Class and Seminar rooms are available for students' needs and for classes.

Special Study Rooms
Special study rooms are available and can be used by all university members. These rooms are equipped with a desk, filing cabinet and internet access.

Locker
250 lockers are available for UI Central Library Members.

3.4. COMPUTER SCIENCES & NETWORK

Directorate of Information System Development and Service (PPSI) are responsible for the programmed computer network system designed to help fulfill the students and lecturers needs in computer usage (from academic activities such as programming to internet usage) through the Integrated UI network (JUITA).

Requirements for using the JUITA:
- Registered as a UI student
- Fill out registration form with a reference from the Associate Dean for Students Affairs/ Head of Study Program/Academic Counselor of the student.

Place of Registration:
- Depok (Integrated Student Service Center Building)
- Salemba (PUSILKOM Building)

Hotline Service
Users who are experiencing problems in the use of this facility can report or request the help of the Computer Technical Unit through the following PPSI hotline service:
Phone : +6221-7863419
Email : support@ui.ac.id
Web Site : http/cso.ui.ac.id
Office Hours : Monday – Friday
(09.00 - 16.00)

Puskom Services at FTUI

Puskom (Pusat Komputer) provides services related to education and information technology development for students and academic/non-academic staff. The office is located at 2nd floor of GK Building at FTUI, Depok Campus. Main duties of Puskom is to provide education facilities for students, learning and research facilities for lecturers, and services for education administration, students and personnel. Puskom also provides connection services to internet and local area network at the Faculty and the University. Internet can be accessed at all area of FTUI. This facility can be used by students as well as faculties. All computer networks have been connected by fiber optic cables for inter-building and copper cable in the buildings with capacity of 100 Mbps. Besides providing local networks, Puskom also controls 7 computer servers with redundancy backup to minimize troubles in academic and research services. Computers are also available for students at various locations at FTUI i.e. computer laboratory at 2nd floor of GK Building, as well as at FTUI building at Salemba Campus. The service hour is 09.00 to 16.00 from Monday to Friday. For further information please contact Puskom at GK Building, 2nd floor, tel. 021-7863508, 021-2720011 ext. 64, or send email to puskom@eng.ui.ac.id.

3.5. STUDENT WELFARE

3.5.1. UNIVERSITAS INDONESIA MOSQUES

- The Ukhuwah Islamiyah (UI) Mosque Depok located in the UI Depok Campus. Established on

28 January 1987 for the Friday prayer with Prof. H. Moh. Daud Ali, SH as khatib (preacher). This mosque was named Ukhuwah Islamiyah for within this mosque is fostered the Islamic brotherhood within the campus as well as the unity and brotherhood of Moslem from within and outside of campus area.

- The Arif Rahman Hakim (ARH) Mosque Salemba is located in the UI Salemba Campus. Established on 10 November 1967, 27 Rajab 1387 H. Based on the UI Rector Decree dated 16 August 1966, a development committee was established and consist of students. The vision of this mosque is to be the center of Islam education in the campus and produces modern Moslems (equipped with faith and knowledge) that can implement the teachings of Islam and help solve religious problems.

3.5.2. TEKSAS BRIDGE

The Teksas Bridge is a linkage bridge between two faculties in the UI Depok campus, the Faculty of Engineering and the Faculty of Humanities. These two faculties are separated by an 80 meters lake. The Teksas Bridge is hoped to serve as:

- As a connection bridge and "Landmark"
- As a research object for steel application product
- As a promotional tool on "Aesthetics Steel"

The concept of this bridge aims towards two approach:

- The side of the bridge on the Faculty of Engineering UI reflects a powerful and masculine character symbolized with a "Sail" shaped Pylon Bridge soaring to the sky as a symbol of "LINGGA".
- The side of the bridge on the Faculty of Humanities UI reflects a flexible and feminine character symbolized with a "Hole Gate" shaped Pylon Bridge as a symbol of "YONI".

3.5.3. CAMPUS BUS

To serve the transportation needs of students within the campus, Universitas Indonesia provides 20 campus busses. These busses will serve inside campus routes from these times: 07.00-21.00 (Monday-Friday) and 07.00-14.00 (Saturday). These yellow campus busses have two different routes:

- Blue: UI Dormitory, Gerbatama, UI Train Station, Faculty of Psychology, Faculty of Social and Political Science, Faculty of Humanities, Faculty of Economics, Faculty of Engineering, KuKel, Student Center Building, Faculty of Mathematic and Natural Sciences, Faculty of Public Health, Balairung, UI Mosque, and Faculty of Law.
- Red : UI Dormitory, Gerbatama, UI Trains Station, Faculty of Law, UI Mosque, Balairung, Faculty of Public Health, Faculty of Mathematic and Natural Sciences, Student Center Building, KuKel, Faculty of Engineering, Faculty of Economics, Faculty of Humanities, Faculty of Social and Political Science, and Faculty of Psychology.

Executive Bus

In order to provide transportation service, especially outside campus transportation, Universitas Indonesia provides Air Conditioned and Non-Air Conditioned busses for rent. These busses are available for various types of activity, such as: UI student organization activities, academic support activities, and many more.

Rental Procedures:

- Written rental request is submitted to:
  Directorate of Student Affairs
  Integrated Student Service Center
  Building, Kampus UI Depok
  Phone : +6221-7867222 (Operator)
  Fax : +6221-7863453
- Payment should be made, at the very latest, one week before the date of use via BNI Bank, Kampus UI Depok Branch, and Account Number: 1273000024 under the name of Universitas Indonesia.
- Proof of payment must be submitted to the Directorate of Student Affairs. Cancellation done 3 (three) days before the date of use will be charge a 10% cancellation fee from the paid rent.

Cancellation on the date of use will be charge a 30% cancellation fee from the paid rent.

3.5.4. STUDENT WELFARE AND FACILITY BUILDING (GKFM) / University Health Center
Address : Kampus UI Depok
Phone : +6221-78881019
This building is located in front of the Faculty of Engineering in UI Campus Depok. GKFM / University Health Center Building was built to better serve several important needs of the students, such as:

Polyclinic Unit
Provide a free health service to all students of the Universitas Indonesia. Students only need to provide their Student ID card to process their membership card for future medical record to receive this service. There are several services available:
a. Public Health Service
b. Dental Health Service

Service Hours:
Monday – Thursday : 08.00 - 12.30
and 14.00 - 19.00
Friday : 08.00 - 11.00
and 14.00 - 19.00
Saturday : 08.00 - 12.00

Note:
Aside from the above mentioned facilities for students which are funded by the Students Welfare and Facility Fund, GKFM in UI Depok Campus also provide facilities for blood chemistry examinations, x-ray, and cardiac examination for university members with affordable prices.

Pharmacy
The pharmacy provides free medicine for 3 (three) days for UI students who seek treatments in the Polyclinic unit. The pharmacy also provides various other medicines for first aid needs for general public purchase.

UI Student Counseling and Guidance (BKM)
In providing service in the mental welfare of the UI students, the Student Counseling and Guidance is a place where UI students can receive psychological help in dealing with academic, personal or family problems. These psychological help are given in the form of counseling and guidance. Guidance service is the provision of information (to an individual or group) with the purpose of making sure that students are able to learn and build an optimal social relationship. Counseling service is the process of giving help to students and support student in finding a way to solve his problem. Here, a counselor functions as a facilitator.

Services in the UI Student Counseling and Guidance
The routine services provided by the BKM UI are counseling and guidance services daily which are done at:
Service Time : Monday – Friday
Service Hours : 09.00 – 15.00
Place : Student Welfare Center
2nd floor, Student Welfare & Facility Center Building
UI Campus Depok
Phone : +6221-96384797

BKM UI staff of counselors consists of psychologies, psychiatrists, and academic counselors.

Problems handled by BKM UI
Generally, the problems handled by the BKM UI consist of academic, personal, family, and social

problems.

BKM UI's other services:
- Online counseling
- Peer counseling training
- Counseling training for counselor lecturers and BKM management in the faculty level.
- Coordinate meeting between BKM in the university and faculty level.
- Personality development training
- Group therapy

UI Salemba Polyclinic
For students in the UI Salemba Campus, the university also provides similar health service in the polyclinic for public health service.

Service time : Monday – Friday: 08.00 – 12.00
and 14.00 – 18.00

3.5.5. UI STUDENT DORMITORY
Location : UI Campus, Depok
Phone/Fax : +6221- 7874414 /
+6221-7874271
Capacity : 594 rooms for male students housing, 656 rooms for female students housing (including the VIP – AC rooms)
Facility : TV, cafetaria, public pay phone, public internet shops, computer rental

UI Wismarini Student Dormitory
Location : Jl. Otto Iskandar Dinata No. 38, East Jakarta, Indonesia
Phone/Fax : +6221-8195058
Capacity : 72 rooms for male students housing, 111 rooms for female students housing
Facility : Badminton court, TV, cafeteria, Table Tennis

The UI Wismarini student dormitory is provided to students from the Salemba Campus (Faculty of Medicine & Faculty of Dentistry).

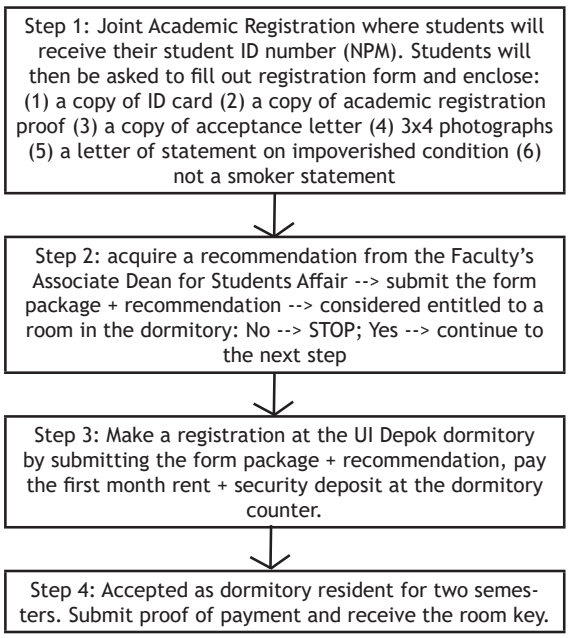
Facility
- Standard housing facility: Bed, table, chair, wardrobe, shoe rack, lamp, bathroom, wash basin.
- Technology facility: Public pay phone shops, public internet shop, photocopy
- Public facility: Cafeteria, praying room, laundry service, sport facility, car/motorcycle parking areas, minimart, dormitory market

Room Specification
- Standard room: Standard bed, table, chair, bookcase, wardrobe, shoe rack, lamp, outdoor bathroom, non AC.
- Standard plus room: Standard bed, table, chair, book case, wardrobe, shoe rack, lamp, outdoor bathroom, air conditioned.
- Bungur and Melati room: Spring bed mattress, table, chair, indoor bathroom, wash basin, small kitchen, living room, air conditioned.
- VIP room: Spring bed mattress, table, chair, indoor bathroom, wash basin, small kitchen, living room, air conditioned.

Other information
- UI Depok dormitory has their own set of rules and regulations which must be obeyed by all dormitory residents as an attempt to create conducive environment for dormitory residents and as an attempt to maintain harmony among the various elements of the UI Depok dormi-

tory residents.
- Each undergraduate student residents of the UI Depok dormitory are entitled to live in the dormitory for one year (semesters 1 and 2).
- Residents will be charged for every electronic device which they brought to their dormitory rooms.
- For further information, please contact UI Dormitory secretariat at +6221-78744144 or by clicking http://asrama.ui.edu.

Registration Process Flow Chart for UI Dormitory



3.5.6. WISMA MAKARA

Phone : +6221-78883670, 78883671
Reservation : +6221-78883672
E-mail : info@makara.cso.ui.ac.id
Website : http://www.wismamakara.com

Wisma Makara, located within the UI Depok campus, is a choice of accommodation for the Southern Jakarta and Depok area. This hotel is very suitable for seminar, training, workshop activities. Surrounded by rubber trees and a lake; the hotel's cool, calm, and beautiful atmosphere provides the perfect background for your various activities. The hotel's tranquility also makes it very suitable for those of you who need tranquility to work and rest.

Available facilities:
- 70 fully furnished rooms (AC, TV, refrigerator)
- Restaurant
- Swimming Pool
- Coffee Shop
- Meeting room (up to 100 person capacity)
- Pay phone shop and internet shop
- Photocopy
- Ballroom (with 800 person capacity)
- Parking area

3.5.7. UI STUDENT ACTIVITY CENTER (PUSGIWA)

Location : UI Campus Depok
Phone : +6221-7270201
Pusgiwa UI is a place for various student activities in Universitas Indonesia. Here we can find secretariat offices of various UI student organizations. Pusgiwa also provides many facilities for students' acitivites such as an 300-400 person auditorium.

3.5.8. UI STUDENTS HALL

Location : UI Salemba Campus
Capacity : 300 People
Phone : +6221-31901355/56
The UI Salemba Student Hall is one of the facilities in UI under the management of Directorate of Student Affairs and Alumni Relation. This hall is often used for various activities such as meetings, seminars, workshops, and many more. The hall is available for use by the university members and public.

3.5.9. SPORT FACILITIES

A. Stadium
- Football field
- Triple Jump Field
- Athletic Field

B. In Door (Gymnasium)
- Badminton court
- Volleyball court
- Basketball court

C. Out Door
- Hockey field
- Basketball court (3 lines)
- Badminton court (1 line)

Permit form or letter for the use of UI Student Activity Center (Pusgiwa), UI Student Hall, and Sport Facilities must be submitted to the Directorate of Student Affairs and Alumni Relation UI located at the Student Activity Center Building, UI Campus Depok.
Phone : +6221-7866403, 7863453
Fax : +6221-7863453
at FTUI, several sport facilities are available: basket ball court, futsal court and climbing wall.

3.5.10. BIKE TO CAMPUS

As a proof to Universitas Indonesia's commitment in implementing the "Go Green" program, UI has provided free bicycles as a mean of transportation within the campus area. Started in 2008, this program establishes collaboration with the Bike to Work and Polygon, making UI the first campus in Indonesia with their own Bike to Campus program.

These bicycles, which colors and and form are specially design for UI, are single seat bicycles. By July 2009, there are around 300 units of bicycle available for use and will continue to be added in accordance with the campus development or demand.

How to Borrow:
1. Students simply showed their student ID card (KTM) to officer in charge of each bike shelter.
2. Campus bicycle can only be use on the available bicycle track. It is forbidden to ride them outside of the available track or to take them outside of campus area.
3. Each bicycle is equipped with a trunk with a maximum capacity of 10 kg and is not to be use as a passenger space.
4. Borrowed bicycle is the responsibility of each student until it is returned to the officer in

charge of each bike shelter.
5. Students may return the borrowed bicycle at the nearest bike shelter by showing their student ID card (KTM) to the officer of said shelter.

Service time for Bike to Campus is Monday to Friday, 08.00 – 17.00. For usage outside of service day and time, interested party must coordinate in accordance to the existing regulation.

A few points worth noting in cycling:
Once you've received your borrowed bicycle from the shelter officer, please do the following:
1. Make sure that your bicycle are in good order and function well.
2. Make sure that you have both hand on the bicycle handle, put your books/bags on the provided space.
3. Arrange your seat in accordance to your height, the height of your seat determines your comfort in cycling.
4. Each bicycle has three shifter levels, use them in accordance.
5. Ride the bicycle on the provided track, stay at the left side of the track when passing other bicycle.
6. Pay special care to motorcycles at each crossing.
7. Pay special attention to cycling safety.

3.6. STUDENT ORGANIZATION

Students are a nation's agent of change in making changes towards a fair and prosper independent society. Their power in fighting and struggling toward that goal must always be balanced with moral power as future asset in their fight in realizing the country's objectives. Thus, students need a vessel where all of their independent, family oriented, scientific, society oriented, and open activities can be accommodated. In Universitas Indonesia, this vessel is called Universitas Indonesia Student Society Association (Ikatan Keluarga Mahasiswa Universitas Indonesia – IKM UI).

IKM UI is a formal and legal organization which is the parent organization for all student activities in Universitas Indonesia. IKM UI adopts constitutional values adapted with the need of student lives. Sovereignty of IKM UI lies in the hand of the students and is fully implemented according to Laws and Constitution of IKM UI. The members of IKM UI are registered students in the Universitas Indonesia, consisting of active and regular members. Active members are IKM UI members that have followed active member admission procedures and received recommendation from the faculty. Regular members are IKM UI members that are not registered within the active membership of IKM UI. The symbol of the Universitas Indonesia Student Society Association (IKM UI) is the Makara of Universitas Indonesia with the wording IKATAN KELUARGA MAHASISWA UNIVERSITAS INDONESIA in black.

Student organizations that are incorporated within the IKM UI are:
1. Students Forum
2. Students Representative Council
3. Student Executive Body
4. Financial Audit Agency
5. Student Court
6. Student Element of the Board of Trustees
7. Autonomous Body of the Student Activity Unit
8. Semi Autonomous Body of the Student Activity Unit

Students Representative Council (Dewan Perwakilan Mahasiswa - DPM)
Students Representative Council is the high level body within the Universitas Indonesia Student Society Association (IKM UI) which possesses a legislative power. Members of the DPM UI consist of independent members from each faculties and representatives of legislative bodies of each faculty. Independent members are voted through a general election, while there can only be one

representative from each faculty's legislative body. Membership of DPM UI is inaugurated by a student forum decree. Term of office for members of the DPM UI is one year and ended simultaneously with the inauguration of the new members of the DPM. The requirements for becoming a member of the DPM UI are regulated within the IKM UI laws. DPM UI has the authority in term of legislative, supervision, and assessment of Students Representative Council's (BEM UI) Work Accountability Report, jurisdiction, facility, and designing the admission mechanism and follow up on financial budget plan of each student organizations within the Universitas Indonesia for each period of management. Members of the DPM UI are entitled to interpellation right, voting right, and the right to convey suggestion and express their opinions.

Secretariat : Student Activity Center
Building (Pusgiwa), 2nd floor
Phone :+6221-94629107,
+6285717884964

Students Representative Council (Badan Eksekutif Mahasiswa - BEM)
Universitas Indonesia Students Representative Council is a student organization within the university level with the executive power. Term of office for UI Students Representative Council is one year, from January to December each year. Chairman and Vice Chairman of BEM UI are elected as a couple directly by members of the IKM UI in a Universitas Indonesia General Election. The elected Chairman and Vice Chairman of BEM UI are later officially inaugurated with a Student Forum Decree. Function and authority of BEM UI are, among other: advocate students in issues relating to funds and facilities at the university level; addressing the external politic policy of IKM UI; serve and coordinate with the Universitas Indonesia Autonomy Body of UKM UI, faculty's executive body, and student element of the Board of Trustees. BEM UI Board of Administrators is elected based on open and close recruitment mechanism.

Student Activity Unit (Unit Kegiatan Mahasiswa - UKM)
Student Activity Unit of Universitas Indonesia (UKM-UI) is a place of student activities and creations in the Universitas Indonesia in one area of specialization, talent and religious services at the university level. The Student Activity Unit consists of the Autonomy and Semi Autonomy Bodies. Universitas Indonesia UKM Autonomy Body is a UKM in the university level which is deemed qualified and valid by the decree of the Student Forum into an autonomic UKM UI Autonomy Body. While the Universitas Indonesia UKM Semi Autonomy Body is a place of student activities and creations in the Universitas Indonesia in one area of specialization, talent and religious services at the university level under the coordination of the Students Representative Council.

a. Art
1. Krida Budaya Dance League
2. Madah Bahana Marching Band
3. Mahawarditra Philharmonic
4. Paragita Choir
5. Student Theater

b. Sport
1. Badminton
2. Hockey
3. Tennis
4. Soccer
5. Basket Ball
6. Swimming
7. Volley Ball
8. Soft Ball
9. Bridge
10. Futsal
11. Dance Sport
12. Cricket
13. Table Tennis

c. Martial Art
1. Taekwondo
2. Merpati Putih
3. Aikido

4. Wushu

d. Religious Groups
1. Moslem Student Society (Nuansa Islam Mahasiswa - SALAM)
2. Catholic Student Society (Keluarga Mahasiswa Katolik - KMK)
3. Oikumene Civitas Academica Society (Persekutuan Oikumene Sivitas Akademika - POSA)
4. Buddhist Student Society (Keluarga Mahasiswa Budhis)
5. Hindu Student Society (Keluarga Mahasiswa Hindu)

e. Academic Group
1. Eka Prasetya Student Study Group (KSM EP)
2. English Debating Society (EDS)

f. Entrepreneurship
1. Student Voice
2. CEDS
3. Student Radio (RTC UI FM) 107,9

g. Others
1. Wira Makara (Student Regiment)
2. Students' Mountaineering Club (Mapala)

3.7. CAREER DEVELOPMENT CENTER (CDC)

Career Development Center is a center with the aim of preparing UI graduates to have more skill and higher level of competitiveness and at the same time channeled UI graduates to the working world. CDC is located in the Student Center Building.

Phone/Fax : +6221-70880577/78881021
Email : cdc-ui@ui.ac.id
FTUI also has a CDC, located at 3rd floor of Engineering Center (EC) Building.
Phone : +6221-78880766

3.8. NATIONAL STUDENT SCIENCE WEEK

The National Student Science Week (Pekan Ilmiah Mahasiswa Nasional - PIMNAS) is a prestigious event for all Universities in Indonesia organized by the Directorate General of Higher Education (DIKTI). The Adikarta Kertawidaya trophy is the award contested at the PIMNAS. PIMNAS is an opportunity to channel the creativity, education and community service of the society in a Student Activities Program. Below is some of the Student Activities Program being contested within the National Student Science Week.

Student Creativity Program – Research (PKM-P)
This program is a research program that aimed to identify the determinants of the quality of the product, find a causal relationship between two or more factors, experimented with a form or equipment, to establish the method of learning, conduct an inventory of resources,
modifying existing products, identify the chemical compounds in the plants, testing the efficacy of plant extracts, formulate marketing techniques, a health survey of street children, teaching methods Balinese script in elementary school students, the rate of economic growth in the craft center of Kasongan, superstition factor that characterizes the behavior of the Javanese community and other activities that have such a purpose.

Student Creativity Program - Technology Application (PKM-T)
This program is a technology assistance program (quality of raw materials, prototypes, models, equipment or production processes, waste management, and quality assurance systems and many other) or other micro-or small-scale industries (home industries, small traders or cooperation) as needed by the potential partners in the program. PKMT require students to exchange ideas with

their partner in the program first, because the product is a solution of a problem which the PKMT partner prioritizes. Thus, in the proposed program, the student must attach a Statement of Willingness to Work Together with Partner on a paper with Rp. 6000, - seal.

Student Creativity Program – Entrepreneurship (PKM-K)
This program is the where students develop their skills in entrepreneurship and is a profit oriented program. Business commodities produced can be in the form of goods or services which in turn are one of the basic capital students will need in entrepreneurship and to enter the market.

Student Creativity Program – Community Service (PKM-M)
This program is an assistance program in science, technology, and arts in an effort to increase performance, build business skills, structuring and improving the environment, strengthening community institutions, the socialization of rational drug use, exposure to and understanding aspects of customary law, relief efforts on illiterates in the society and other community programs both for formal and non-formal societies.

Student Creativity Program - Writing Scientific Articles (PKM - AI)
This program is a program of writing a scientific article which originated from student activities in education, research, or community service which the student has done himself (case studies, field practice, community development work, student creativity program, internships, and many other).

Student Creativity Program – Written Concept (PKM - GT)
This program is a program of writing a scientific article that originated from ideas or concepts from a group of students. This written idea refers to an actual problem that can be found in the community and require a smart and realistic solution. In each area these programs are subdivided into seven groups of fields of science, namely:

1. Health field, including: Pharmacy, Nutrition, Obstetrics, Medicine, Dentistry, Nursing, Public Health, and Psychology.
2. Agricultural field, include: Veterinary Medicine, Forestry, Maritime, Fisheries, Agriculture, Animal Husbandry, and Agricultural Technology.
3. Mathematic and Natural Sciences field, including: Astronomy, Biology, Geography, Physics, Chemistry, and Mathematics.
4. Technology and Engineering field, including: Information Technology, Engineering, and Agricultural Technology.
5. Social Economy field, including: Agribusiness (Agriculture), Economic, Social and Political Sciences.
6. Humanities field, including: Religion, Language, Philosophy, Literature, and Art.
7. Education field, including: Education Sciences study program under the Faculty of Education.

Submission deadline for PKM-K, PKM-M, and PKM-P proposals are in October of each year, while deadline proposals for PKM-GT and PKM-AI are in March of each year. Almost all of these areas can be followed by students in 12 faculties at UI. PIMNAS is a means to prove the existence of UI as a research university in Indonesia. Win the Adikarta Kertawidya trophy and show the existence of UI as the Research Campus.
For further information :
http://bem.ui.ac.id/
http://mahasiswa.ui.ac.id/info-pkm-2010.html

3.9. SCHOLARSHIP

Universitas Indonesia currently manages approximately 71 scholarships both from the government and the private sector. Information about scholarships can be obtained at the Student Affairs Division of each faculty or through the website of the Directorate of Student Affairs at www.mahasiswa.ui.ac.id.

There are two types of scholarship in UI:
- UI Scholarship
- Donor/Sponsor Scholarship

General requirement procedure for scholarship application from Donor/Sponsor:
- Submit application through the Faculty Head with a recommendation from the Associate Dean of Student Affairs.
- Submit a photocopy of academic transcript stating a GPA corresponding with the requirement given by the donor/sponsor.
- Not a smoker.
- Is not a receiver of similar other scholarship.
- Other requirements as stated by the Donor/Sponsor.

LIST OF NAME OF SCHOLARSHIP DONOR/ SPONSOR FOR UNIVERSITAS INDONESIA STUDENTS

1. Bank BNI 46
2. Bank Central Asia
3. Bank Indonesia
4. Bank KEB Indonesia
5. Bank Lippo
6. Bank Mandiri

   - Bank Mandiri

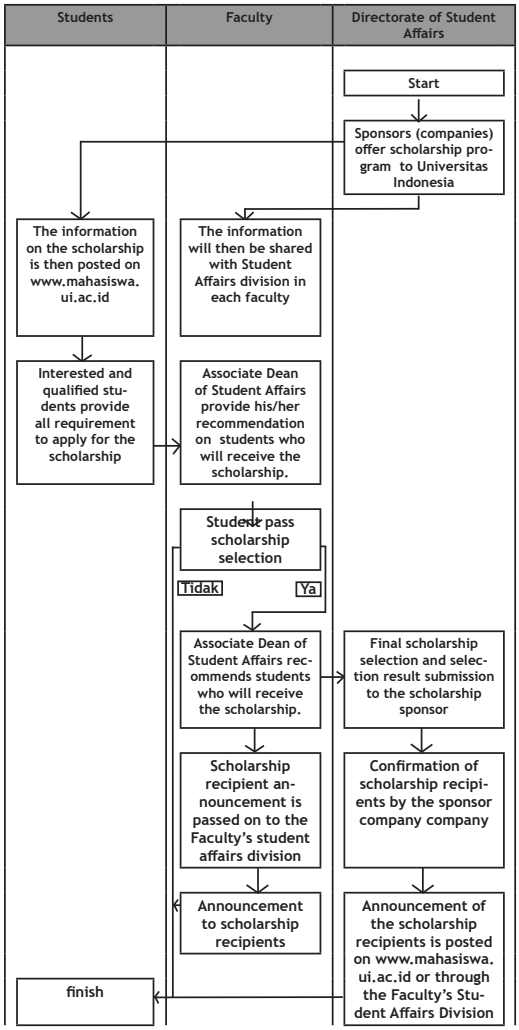
   - Bank Mandiri Prestasi
7. Bank Mayapada
8. Bank Niaga
9. Bank Permata
10. Bank Tabungan Negara
11. Student Special Aid

    - Special Aid for Undergraduate Program Student

    - Special Aid for Vocational Program Student
12. BAZNAS
13. West Java Scholarship
14. BMU Scholarship
15. CIMB Niaga Excellent Scholarship
16. DKI Jakarta Scholarship
    - Jakarta Achievement Scholarship
    - Jakarta Thesis Scholarship
17. BPMIGAS
18. BRI
19. BUMN
20. DIKNAS
    - Diknas (Excellent Activist Scholarship)
    - Diknas (Excellent Master Scholarship)
    - Diknas (Super Excellent Scholarship)
21. Diknas 1 (BBM)
22. Diknas 2 (PPA)
23. Eka 2007 - 2008
24. Eka 2008 - 2009
25. Eka CIpta (Uang Buku)
26. Exxon MOBIL (For Students from Aceh)
27. Exxon MOBIL (For Students from Aceh)

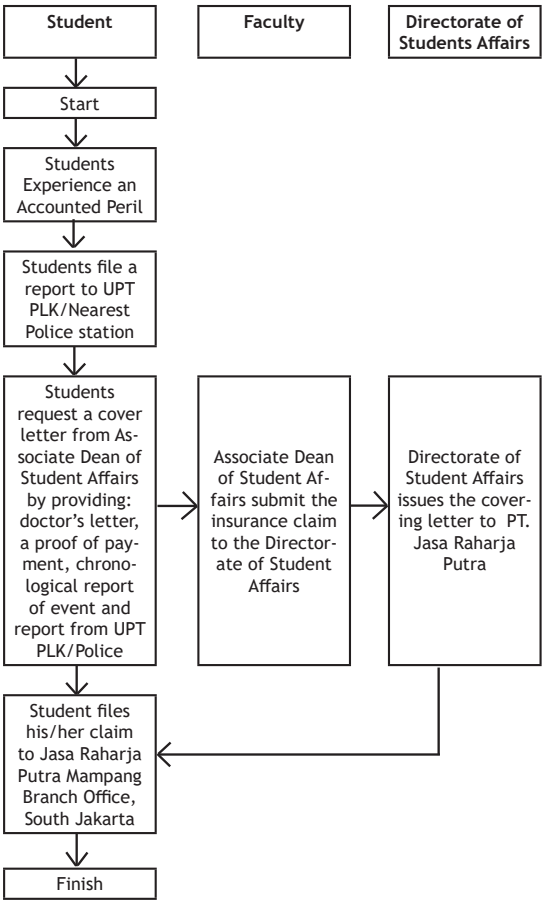
    Thesis
28. Indosat
29. Karya Salemba 4 (KS 4)
30. KORINDO
31. LPE

Flowchart of Scholarship Application



32. MARUBENI
33. MC.DERMONT
34. Part TIme Job
35. Posco (Thesis Aid)
36. PPA/BBM Angkatan 2009
    - PPA/BBM S1
    - PPA/BBM DIII
37. PPE
38. PT. BUMA Apparel Industry
39. PT. Coca Cola
40. PT. Indocement
41. PT. Accenture
42. PT. Sun Life Indonesia
43. PT. Thiess
44. Qatar Charity
45. Recapital
46. Rotary Club Jakarta Sudirman
47. Salim
48. Sariboga
49. Shell (Extention Scheme)
50. Shell (New Scheme)
51. Sime Darby
52. Sumitomo Bank (Supportive Scholarship)
53. Sumitomo Bank (Full Scholarship)
54. Sumitomo Corporation Scholarship
55. Supersemar
56. Tanoto
57. Tanoto S2
58. Total E & P
59. TPSDP (DIKTI)
60. UFJ Foundation / Mitsubishi
61. Unilever
62. Y. Asahi Glass (YAGI)
63. Y. Toyota (REGULER)
64. Yayasan IJARI
65. Yayasan Goodwill Internasional
66. YAYASAN TIFICO
67. YKPP - Pertamina
    - YKPP - Pertamina (Tuition Fee)
    - YKPP - Pertamina (Living Allowance)

Insurance Claims Process



Cause	Condition	Required Document
Train Accident	Injured	1. A notification letter from the Faculty's Associate Dean of Student Affairs to the Directorate of Students Affairs.
		2. Accident Report issued by the police
		3. Treatment report from the attending doctor
		4. Original receipt from the hospital or the attending physician
	Death	1. A notification letter from the Faculty's Associate Dean of Student Affairs to the Directorate of Students Affairs.
		2. Accident Report issued by the police
		3. Accident Report from Polsuska (PT. KAI)
		4. Autopsy report from the hospital
		5. Death Certificate
		6. A copy of the victim's birth certificate
		7. A copy of Family Card
		8. Heir certificate letter from the local district office.
Road Accident	Injured	1. A notification letter from the Faculty's Associate Dean of Student Affairs to the Directorate of Students Affairs.
		2. Accident Report issued by the police
		3. Treatment report from the attending doctor
		4. Original receipt from the hospital or the attending physician and the pharmacy
	Death	1. A notification letter from the Faculty's Associate Dean of Student Affairs to the Directorate of Students Affairs.
		2. Accident Report issued by the police
		3. Accident Report from Transportation Agency
		4. Autopsy report from the hospital
		5. Death Certificate
		6. A copy of the victim's birth certificate
		7. A copy of Family Card
		8. Heir certificate letter from the local district office.

3.10. INSURANCE

Each student enrolled in Universitas Indonesia for each running semester (participate in academic activities) will also be registered as an insurance member of PT. Asuransi Jasa Raharja.

For these insured students, they are allowed to submit an insurance claim in accordance with the following provisions:

- Accidents included within the insurance claim are accidents which occurred during the student's journey from home to UI campus to participate in academic and extracurricular activities whether it is within or outside of Campus area and with the UI/Faculty's Management's knowledge and permission.
- Compensation on claim regarding students' accident is only applicable to those who have paid the DKFM fee for the semester.
- In the event of an accident, student must report the accident no later than 3x24 hours to the office of the Universitas Indonesia Directorate of Student Affairs Sub Directorate of Student Welfare Services or the nearest PT Jasa Raharja Office Branch.
- If after 180 (one hundred and eighty) days, the accident is not reported, insurance compensation shall be canceled.
- Compensation claim (for victims suffering from injuries) must be submitted by attaching the original and valid receipt from doctor/hospital/clinic that treated the student's injuries.
- Non-medical care or treatment is not compensable.
- Students may send their inquiries regarding any matter that are not listed here directly to the Universitas Indonesia Head of Student Welfare Sub Directorate at the Central Administration Building, Universitas Indonesia Campus, Depok.

Compensation Receivable from the Insurance Claim *)
Death due to an accident :
Rp. 5.000.000, -
Permanent disability due to accident :
Rp. 10.000.000, -
Care / medical Treatment due to accident (maximum payment) :
Rp. 3.500.000, -

*) Subject about to change without notice

3.11. GENERAL INFORMATION

Post Office, Depok Campus

The Depok Campus Post Office offers postage stamp sales, special delivery mail delivery, registered mail, parcel post, money orders, checks and postal giro and savings services such as Batara. Address: Ground Floor Integrated Student Services Center (PPMT) Building, UI ,Depok Campus, 16424

Important Phone Numbers

UI Campus Salemba
Phone : +6221-330343, 3303455
Fax : +6221-330343

UI Campus Depok

Phone : +6221-7270020, 7270021, 7270022, 7270023, 7863460

Firefighters : 116
SAR : 55 021

Ambulance

RSCM : 118
Accidents : 119, 334 130
Police (on duty) : 525011

Police station

Central Jakarta : 3909922
North Jakarta : 491 017

South Jakarta : 7206011
West Jakarta : 5482371
East Jakarta : 8191478
Depok : 7520014

3.12. INTERNATIONAL JOURNAL OF TECHNOLOGY

International Journal of Technology (IJTech) is bi-annual international referred journal with the objectives to explore, develop, and elucidate the knowledge of engineering design and technology, to keep practitioners and researchers informed on current issues and best practices, as well as serving as a platform for the exchange of ideas, knowledge, and expertise among technology researchers and practitioners.

International Journal of Technology provides an opportunity to share detailed insights from different understandings and practices associated with technology. It provides an international forum for cross-disciplinary exchange of insights and ideas regarding value and practices for dissemination. International Journal of Technology will publish your work to international society of practitioners and researchers with interest in technology design and development from a wide variety of sectors.

Website: www.ijtech.eng.ui.ac.id

3.13. QUALITY IN RESEARCH (QiR) CONFERENCE

QiR Conference is a bi-annual international conference organized by FTUI since 1998. The 13th QiR was held in Yogyakarta from 25 – 28 June 2013. It was attended by over 400 participants from 16 different countries in the world. This conference provide a chance for students, be it undergraduate, master or doctoral program students, to present their research findings in front of an international audience. The 14th QiR will be held in August 2015. For more detail information on Qir, please visit: http://qir.eng.ui.ac.id.

3.14. INTERNATIONAL OFFICE

International Office is the university division dedicated to support the internationalization goals of the university and to handle international mobility involving the university and the international civitas academica. Their goal is to assist the international students and scholars handle their academic-related matters at Universitas Indonesia and to bridge Universitas Indonesia's civitas academica with overseas universities. Universitas Indonesia has a worldwide cooperation with various universities all over the world. These cooperations include not only academic but also research collaborations, giving the international access and exposure to its entire proud member.

The International Office of Universitas Indonesia provides various services such as: Bilateral Cooperation (University to University Cooperation), Regional Cooperation (International Associations & International Forums), Government to Government Cooperation (G to G), International Learning and Teaching, Student Exchange, Double Degree, Sandwich Program, Visiting Scholars, Study abroad, Scholarship Opportunities, International Research and Research Training, International Knowledge Transfer; are some of the services provided by the International Office. These opportunities are open for all university members from lecturers to students, be it in their Bachelor, Master or Ph.D program. Students can benefit from these programs in experiencing a once in a life time chance to study and understand different academic cultures in the world.

For further information, please contact:
Central Administration Building
1st Floor, Universitas Indonesia
Kampus Depok, Jawa Barat 16424
Phone/fax : +62 21 – 7888 0139
Email : intofui@yahoo.com, io-ui@ui.ac.id
Milist : internationaloffice@yahoogroups.com
Twitter : @intofui

UNDERGRADUATE PROGRAM

4. UNDERGRADUATE PROGRAM (REGULAR/PARALLEL/INTERNATIONAL)

4.1. UNDERGRADUATE PROGRAM IN CIVIL ENGINEERING

Program Specification

1.	**Awarding Institution**	Universitas Indonesia Double Degree: Universitas Indonesia and partner university	
2.	**Teaching Institution**	Universitas Indonesia Double Degree: Universitas Indonesia and partner university	
3.	**Programme Tittle**	Undergraduate Program in Civil Engineering	
4.	**Class**	Regular, Parallel, and International	
5.	**Final Award**	Sarjana Teknik (S.T) Double Degree: Sarjana Teknik (S.T) and Bachelor of Engineering (B.Eng)	
6.	**Accreditation / Recognition**	BAN-PT: A - Accredited, AUN-QA	
7.	**Language(s) of Instruction**	Bahasa Indonesia and English	
8.	**Study Scheme (Full Time / Part Time)**	Full Time	
9.	**Entry Requirements**	High school /equivalent, or D3 / Polytechnique / equivalent, AND pass the entrance exam.	
10.	**Study Duration**	Designed for 4 years	
	Type of Semester	Number of Semester	Number of weeks / semester
	Regular	8	17
	Short (optional)	3	8
11.	**Graduate Profiles:** A Bachelor Engineer who is able to design and built green civil engineering infrastructures with professional ethics		
12.	**Expected Learning Outcomes:** 1. Apply knowledge of mathematics, natural science, engineering fundamentals and civil engineering to the solution of complex engineering problems. 2. Identify, formulate, research literature and analyze complex civil engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences 3. Design solutions for complex civil engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations 4. Conduct investigations of complex civil engineering problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions. 5. Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex civil engineering problems, with an understanding of the limitations. 6. Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional civil engineering practice and solutions to complex civil engineering problems. 7. Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex civil engineering problems in societal and environmental contexts.		

12.	8. Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice. 9. Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings. 10. Communicate effectively on complex civil engineering activities with the civil engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. 11. Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments. 12. Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. 13. Propose alternative solutions of several problems occur in society, nation and country. 14. Use knowledge of entrepreneurship to identify an independent business based on creativity and professional ethics.		
13	**Classification of Subjects**		
No.	**Classification**	**Credit Hours (SKS)**	**Percentage**
i	**University General Subjects**	**18**	**13 %**
ii	**Basic Engineering Subjects**	**27**	**19 %**
iii	**Core Subjects**	**79**	**55 %**
iv	**Elective Subjects**	**12**	**8 %**
v	**Internship, Seminar, ndergraduate Thesis, Project**	**8**	**6 %**
	Total	**144**	**100 %**
14.	**Total Credit Hours to Graduate**		**144 SKS**

Course Structure of Undergraduate Program in Civil Engineering (Regular/Parallel)

Code	Mata Ajaran	Subject	SKS
	Semester 1	**1st Semester**	
UIGE600002	MPKT B	Integrated Character Building Course B	6
UIGE600003	Bahasa Inggris	English	3
ENGE 6 0 0001	Kalkulus 1	Calculus 1	3
ENGE 6 0 0005	Fisika Mekanika dan Panas	Physics (Mechanics and Thermal)	3
ENGE 6 0 0006	Praktikum Fisika Mekanika dan Panas	Physics(Mechanics and Thermal) Laboratory	1
ENCV 601 001	Pengantar Sistem Rekayasa Sipil	Introduction to Civil Engineering System	3
		Sub Total	**19**
	Semester 2	**2nd Semester**	
UIGE600001	MPKT A	Integrated Character Building Course A	6
UIGE600020 - 48	Olah raga / Seni	Sport/Art	1
UIGE600010-15	Agama	Religion	2
ENGE 6 0 0002	Kalkulus 2	Calculus 2	3
ENGE 6 0 0004	Aljabar Linier	Linear Algebra	4
ENGE 6 0 0007	Fisika Listrik, MGO	Physics (Electricity, MWO)	3
ENGE 6 0 0008	Praktikum Fisika Listrik, MGO	Physics (Electricity, MWO)Laboratory	1
		Sub Total	**20**
	Semester 3	**3rd Semester**	
ENGE 6 0 0009	Kimia Dasar	Basic Chemistry	2
ENCV 603 001	Kalkulus lanjut	Advanced Calculus	3
ENCV 603 002	Properti Material	Material Properties	3
ENCV 603 003	Gambar Konstruksi	Construction Drawing	2
ENCV 603 004	Ilmu Ukur Tanah	Surveying	3
ENCV 603 005	Statika	Statics	4
ENCV 603 006	Mekanika Fluida	Fluid Mechanics	3
		Sub Total	**20**
	Semester 4	**4th Semester**	
ENGE 6 0 0010	Statistik dan Probabilistik	Statistic and Probability	2
ENCV 604 001	Kimia Lanjut	Advanced Chemistry	2
ENCV 604 002	Metode Numerik	Numerical Computing	2
ENCV 604 003	Konstruksi Bangunan	Building Construction	3
ENCV 604 004	Mekanika Solid	Solid Mechanics	4
ENCV 604 005	Mekanika Tanah Dasar	Basic Soil Mechanics	3
ENCV 604 006	Hidrolika	Hydraulics	3
		Sub Total	**19**
	Semester 5	**5th Semester**	

ENGE 6 0 0012	K3LL	Health, Safety and Environmental Protection	2
ENCV 605 011	Analisa Struktur	Structural Analyses	3
ENCV 605 012	Struktur Beton 1	Concrete Structure 1	3
ENCV 605 013	Mekanika Tanah	Soil Mechanics	3
ENCV 605 014	Perancangan Geometrik Jalan	Road Geometric Design	3
ENCV 605 015	Teknik Transportasi	Transportation Engineering	3
ENCV 605 016	Perancangan Infrastruktur Keairan 1	Water Engineering 1	3
		Sub Total	**20**
	Semester 6	**6th Semester**	
ENGE 6 0 0011	Ekonomi Teknik	Engineering Economics	3
ENCV 606 001	Struktur Baja 1	Steel Structure 1	3
ENCV 606 002	Rekayasa Pondasi	Foundation Engineering	3
ENCV 606 003	Perancangan Struktur Perkerasan	Pavement Design	3
ENCV 606 004	Perancangan Infrastruktur Keairan 2	Water Engineering 2	3
ENCV 606 005	Manajemen Konstruksi	Construction Management	2
ENCV 606 006	Metode dan Peralatan Konstruksi	Construction Method & Equipments	2
		Sub Total	**19**
	Semester 7	**7th Semester**	
ENCV 607 001	Proyek	Capstone Project	3
ENCV 600 001	Kerja Praktek	Internship	3
ENCV 600 002	Seminar	Seminar	1
	Mata Kuliah Pilihan Bebas	Elective Course	6
	Mahasiswa memililih 12 sks mata kuliah pilihan (1) pada program S1/S2 Teknik Sipil atau (2) dari program studi lain di lingkungan Universitas Indonesia	Students choose 12 credits of elective courses offered by : (1) undergraduate/postgraduate program of Civil Engineering or (2) other study program in Universitas Indonesia	
		Sub Total	**10**
	Semester 8	**8th Semester**	
ENCV 608 001	Etika dan Aspek Hukum Kontrak Konstruksi	Etics & Legal Aspect of Construction Law	2
ENCV 608 002	Kewirausahaan	Enterpreneurship	2
ENCV 600 003	Skripsi	Final Project	4
	Mata Kuliah Pilihan Bebas	Elective Course	6
	Mahasiswa memililih 12 sks mata kuliah pilihan (1) pada program S1/S2 Teknik Sipil atau (2) dari program studi lain di lingkungan Universitas Indonesia	Students choose 12 credits of elective courses offered by : (1) undergraduate/postgraduate program of Civil Engineering or (2) other study program in Universitas Indonesia	
		Sub Total	**14**
		TOTAL	**144**

Mk Pilihan Jenjang S1 Teknik Sipil

	Semester 7	7th Semester	
ENCV 607 002	Sistem Rekayasa Sipil	Civil Engineering System	3
ENCV 607 003	Lingkungan Berkelanjutan	Sustainable Built Environemnt	3
ENCV 607 004	Struktur Baja 2	Steel Structure 2	3
ENCV 607 005	Teknik Sungai	River Engineering	3
ENEV605001	Tata Kota dan Sanitasi	Urban Planning and Sanitation	3
	Semester 8	**8th Semester**	
ENCV608003	Struktur Beton 2	Concrete Structure 2	3
ENCV608004	Metode Konstruksi Geoteknik	Construction Methods in Geotechnic	3
ENCV608005	Pengelolaan Limpasan Hujan	Stormwater Management	3
ENEV606004	Amdal dan ISO	Environmental Impact Analyses and ISO	3

Mk Pilihan Jenjang S2

	Semester 7	7th Semester	
Kekhususan Struktur		**Structure**	
ENCV801101	Struktur Beton Pratekan	Prestressed Concrete Structure	3
ENCV801102	Dinamika Struktur	Structural Dynamics	3
ENCV803101	Bangunan Lepas Pantai	Offshore Structure	3
ENCV803102	Struktur Jembatan	Bridge Structure	3
ENCV803103	Struktur Bangunan Tinggi	Highrise Structural Building	3
Kekhususan Geoteknik		**Geotechnics**	
ENCV 801 201	Mekanika Tanah Lanjut	Advanced Soil Mechanics	3
ENCV 801 202	Investigasi Geoteknik Lanjut	Geotechnic Investigation	3
ENCV 803 201	Teknik Pondasi Lanjut dan Galian Dalam	Adv. Foundation Engineering & Deep Excavation	3
ENCV 803 202	Dinamik dan Kegempaan Geoteknik	Diynamics & Earthquake in Geotechnic	3
ENCV 803 203	Topik Khusus Geoteknik	Special Topics in Geotechnics	3
Kekhususan MSDA		**Water Resources Management**	
ENCV 801 401	Hidrologi Teknik	Engineering Hydrology	3
ENCV 801 402	Hidrolika Air Tanah	Ground Water Hydraulics	3
Kekhususan Transportasi		**Transportation**	
ENCV 801 301	Rekayasa dan Kendali Lalu Lintas	Traffic Control Engineering	3
ENCV 801 302	Sistem Transportasi	Transportation System	3
ENCV 803 302	Perencanaan dan Pengoperasian Angk Umum	Public Tranport Management and Planning	3
ENCV 803 303	Perencanaan dan Pengelolaan Pelabuhan	Harbor Transportation Management and Planning	3
ENCV 803 304	Perencanaan dan Pengelolaan Lapangan Terbang	Airport Planning and Management	3
ENCV 803 305	Peranc Geometrik Jalan Lanjut	Advanced Road Geometric Design	3

Kekhususan Manajemen Konstruksi		**Construction Management**	
ENCV 801 601	Investasi Proyek dan Keuangan	Project Investment and Finance	3
ENCV 803 601	Manajemen SDM dan Komunikasi Proyek	Human Resource and Project Communication Management	3
ENCV 803 605	Sistem Manajemen Kesehatan, Keselamatan Kerja dan Lingkungan	Management System of Health, Safety and Environment	3

	Semester 8	8th Semester	
Kekhususan Struktur		**Structure**	
ENCV802101	Struktur Bang.Tahan Gempa	Earthquake Resistance Building	3
ENCV802102	Metode Elemen Hingga	Finite Element Method	3
ENCV802103	Mekanika Material Lanjut	Advanced Mechanics of Material	3
ENCV802104	Struktur Baja Lanjut	Advanced Steel Structure	3
ENCV802105	Teknologi Beton & Beton Bertulang Lanjut	Concrete Technology & Adv. Reinforced Concrete	3
Kekhususan Geoteknik		**Geotechnics**	
ENCV802201	Stabilitas Lereng dan Perbaikan Tanah	Slope Stabilization and Soil Improvement	3
ENCV802202	Geoteknik Lingkungan	Environmental Geotechnics	3
ENCV802203	Metode Numerik Dalam Geoteknik	Numerical Methods in Geotechnical Engineering	3
Kekhususan MSDA		**Water Resources Management**	
ENCV802401	Mekanika Fluida Lingkungan	Environmental Fluid Mechanics	3
ENCV802402	Manajemen Sumber Daya Air	Water Resources Management	3
ENCV802403	Bangunan Air	Hydraulics Structures	3
Kekhususan Transportasi		***Transportation***	
ENCV 802 301	Ekonomi Transportasi	Transportation Economics	3
ENCV 802 302	Kebijakan Transportasi	Transportation Policy	3
ENCV 802 303	Keselamatan Transportasi	Transportation Safety	3
Kekhususan Manajemen Konstruksi		**Construction Management**	
ENCV802601	Manajemen Waktu dan Biaya Proyek	Time & Cost Management	3
ENCV802602	Manajemen Kualitas dan Risiko Proyek	Quality & Risk Management	3
ENCV802603	Manajemen Pengadaan, Administrasi Kontrak dan Klaim	Procurement Management, Contract & Claim Administration	3
ENCV802604	Metode dan Peralatan Konstruksi Lanjut	Advanced Construction Methods & Equipments	3

Course Structure International Undergraduate Civil Engineering

Code	Subject	CP	Code	Subject	CP
	1st Semester			**2nd Semester**	
UIGE610002	Academic Writing	3	ENGE 6 1 0002	Calculus 2	3
ENGE 6 1 0001	Calculus 1	3	ENGE 6 1 0004	Linear Algebra	4
ENGE 6 1 0005	Physics (Mechanics and Thermal)	3	ENGE 6 1 0007	Physics (Electricity, MWO)	3
ENGE 6 1 0006	Physics(Mechanics and Thermal) Laboratory	1	ENGE 6 1 0008	Physics (Electricity, MWO) Laboratory	1
ENGE 6 1 0009	Basic Chemistry	2	ENCV612001	Advanced Chemistry	2
ENGE 6 1 0010	Statistic and Probability	2	ENCV612002	Construction Drawing	2
ENCV611001	Introduction to Civil Engineering System	3	ENCV612003	Statics	4
ENCV611002	Material Properties	3			
	Sub Total	**20**		**Sub Total**	**19**
	3rd Semester			**4th Semester**	
ENGE 6 1 0011	Engineering Economics	3	ENGE 6 1 0012	Health, Safety and Environmental Protection	2
ENCV613001	Advanced Calculus	3	ENCV614001	Numerical Method	2
ENCV613002	Building Construction	3	ENCV614002	Surveying	3
ENCV613003	Solid Mechanics	4	ENCV614003	Structural Analysis	3
ENCV613004	Basic Soil Mechanics	3	ENCV614004	Soil Mechanics	3
ENCV613005	Fluid Mechanics	3	ENCV614005	Transportation Engineering	3
			ENCV614006	Hydraulics	3
	Sub Total	**19**		**Sub Total**	**19**
	5th Semester			**6th Semester**	
UIGE610004	Integrated Character Building Course B	6	UIGE610001	Integrated Character Building Course A	6
ENCV615001	Steel Structure 1	3	UIGE610003	Sport/ Art	1
ENCV615002	Foundation Engineering	3	ENCV616001	Concrete Structure 1	3
ENCV615003	Road Geometric Design	3	ENCV616002	Pavement Design	3
ENCV615004	Water Engineering 1	3	ENCV616003	Water Engineering 2	3
ENCV615005	Ethics and Legal Aspect of Construction Contract	2	ENCV616004	Construction Management	2
			ENCV616005	Construction Methods & Equipments	2
	Sub Total	**20**		**Sub Total**	**20**
	7th Semester			**8th Semester**	
ENCV617001	Capstone Project	3	UIGE610005	Islamic Studies	2

ENCV610001	Internship	3	UIGE610006	Catholic Studies	
ENCV610002	Seminar	1	UIGE610007	Christian Studies	
			UIGE610008	Hindu Studies	
			UIGE610009	Buddhist Studies	
			ENCV 618 001	Enterpreneurship	2
			ENCV610003	Final Project	4
	Students choose 12 credits of elective courses offered by : (1) undergraduate/postgraduate program of Civil Engineering or (2) other study program in Universitas Indonesia	6		Students choose 12 credits of elective courses offered by : (1) undergraduate/postgraduate program of Civil Engineering or (2) other study program in Universitas Indonesia	6
	Sub Total	**13**		**Sub Total**	**14**
				TOTAL	**144**

Elective Courses on Civil Engineering Undergraduate Program

Code	Subject	CP	Code	Subject	CP
	7th Semester			**8th Semester**	
ENCV 617 002	Civil Engineering System	3	ENCV 618 002	Steel Structure 2	3
ENCV 617 003	Sustainable Built Environment	3	ENCV 618 003	Construction Methods in Geotechnic	3
ENCV 617 004	Concrete Structure 2	3	ENCV 618 004	Stormwater Management	3
ENCV 617 005	River Engineering	3	ENCV 618 004	Urban Planning and Sanitation	3
ENCV 617 006	Environmental Impact Analyses and ISO	3			

Elective Courses on Civil Engineering Master Program

Code	Subject	CP	Code	Subject	CP
	7th Semester			**8th Semester**	
	Structure			**Structure**	
ENCV801101	Prestressed Concrete Structure	3	ENCV802101	Earthquake Resistance Building	3
ENCV801102	Structural Dynamics	3	ENCV802102	Finite Element Method	3
ENCV803101	Offshore Structure	P	ENCV802103	Advanced Mechanics of Material	3
ENCV803102	Bridge Structure	P	ENCV802104	Advanced Steel Structure	3

ENCV803103	Highrise Structural Building	P	ENCV802105	Concrete Technology & Adv. Reinforced Concrete	3
	Geotechnics			**Geotechnics**	
ENCV 801 201	Advanced Soil Mechanics	3	ENCV802201	Slope Stabilization and Soil Improvement	3
ENCV 801 202	Geotechnic Investigation	3	ENCV802202	Environmental Geotechnics	3
ENCV 803 201	Adv. Foundation Engineering & Deep Excavation	3	ENCV802203	Numerical Methods in Geotechnical Engineering	3
ENCV 803 202	Diynamics & Earthquake in Geotechnic	3			
ENCV 803 203	Special Topics in Geotechnics	3			
	Water Resources Management			Water Resources Management	
ENCV 801 401	Engineering Hydrology	3	ENCV802401	Environmental Fluid Mechanics	3
ENCV 801 402	Ground Water Hydraulics	3	ENCV802402	Water Resources Management	3
			ENCV802403	Hydraulics Structures	3
	Transportation			**Transportation**	
ENCV 801 301	Traffic Control Engineering	3	ENCV 802 301	Transportation Economics	3
ENCV 801 302	Transportation System	3	ENCV 802 302	Transportation Policy	3
ENCV 803 302	Public Tranport Management and Planning	3	ENCV 802 303	Transportation Safety	3
ENCV 803 303	Harbor Transportation Management and Planning	3			
ENCV 803 304	Airport Planning and Management	3			
ENCV 803 305	Advanced Road Geometric Design				
	Construction Management			**Construction Management**	
ENCV 801 601	Project Investment and Finance	3	ENCV802601	Time & Cost Management	3
ENCV 803 601	Human Resource and Project Communication Management	3	ENCV802602	Quality & Risk Management	3
ENCV 803 605	Management System of Health, Safety and Environment	3	ENCV802603	Procurement Management, Contract & Claim Administration	3
			ENCV802604	Advanced Construction Methods & Equipments	3

4.2. UNDERGRADUATE PROGRAM IN ENVIRONMENTAL ENGINEERING

Program Specification

1.	**Awarding Institution**	Universitas Indonesia	
2.	**Teaching Institution**	Universitas Indonesia	
3.	**Programme Tittle**	Undergraduate Program in Environmental Engineering	
4.	**Class**	Regular	
5.	**Final Award**	Sarjana Teknik (S.T)	
6.	**Accreditation / Recognition**	BAN-PT: A Accredited AUN-QA	
7.	**Language(s) of Instruction**	Bahasa Indonesia and English	
8.	**Study Scheme (Full Time / Part Time)**	Full Time	
9.	**Entry Requirements**	High school /equivalent, or D3 / Polytechnique / equivalent, AND pass the entrance exam.	
10.	**Study Duration**	Designed for 4 years	
	Type of Semester	Number of Semester	Number of weeks / semester
	Regular	8	17
	Short (optional)	3	8
11.	**Graduate Profiles:** "A bachelor engineering who is able to design system and infrastructure of environmental engineering in order to improve environmental quality and to protect humans from environmental degradation"		
12.	**Expected Learning Outcomes:** 1. Apply knowledge of mathematics, natural science, engineering fundamentals and environmental engineering to the solution of complex engineering problems. 2. Identify, formulate, research literature and analyze complex environmental engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences 3. Design solutions for complex environmental engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations 4. Conduct investigations of complex environmental engineering problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions. 5. Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex environmental engineering problems, with an understanding of the limitations. 6. Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional environmental engineering practice and solutions to complex environmental engineering problems. 7. Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex environmental engineering problems in societal and environmental contexts. 8. Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice. 9. Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings. 10. Communicate effectively on complex environmental engineering activities with the environmental engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.		

12.	11. Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments. 12. Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. 13. Propose alternative solutions of several problems occur in society, nation and country 14. Use knowledge of entrepreneurship to identify an independent business based on creativity and professional ethics		
13	**Classification of Subjects**		
No.	**Classification**	**Credit Hours (SKS)**	**Percentage**
i	**University General Subjects**	18	13 %
ii	**Basic Engineering Subjects**	27	19 %
iii	**Core Subjects**	79	55 %
iv	**Elective Subjects**	12	8 %
v	**Internship, Seminar, Undergraduate Thesis, Project**	8	6 %
	Total	144	100 %
14.	**Total Credit Hours to Graduate**		144 SKS

COURSE STRUCTURE UNDERGRADUATE PROGRAM ENVIRONEMNTAL ENGINEERING

Code	Mata Ajaran	Subject	SKS
	Semester 1	**1st Semester**	
UIGE600002	MPKT B	Integrated Character Building Course B	6
UIGE600003	Bahasa Inggris	English	3
ENGE 6 0 0001	Kalkulus 1	Calculus 1	3
ENGE 6 0 0005	Fisika Mekanika dan Panas	Physics (Mechanics and Thermal)	3
ENGE 6 0 0006	Praktikum Fisika Mekanika dan Panas	Physics(Mechanics and Thermal) Laboratory	1
ENEV601001	Pengantar Sistem Rekayasa Teknik Lingkungan	Introduction to Environmental Engineering System	3
		Sub Total	**19**
	Semester 2	**2nd Semester**	
UIGE600001	MPKT A	Integrated Character Building Course A	6
UIGE600020 - 48	Olah raga / Seni	Sport/Art	1
UIGE600010-15	Agama	Religion	2
ENGE 6 0 0002	Kalkulus 2	Calculus 2	3
ENGE 6 0 0004	Aljabar Linier	Linear Algebra	4
ENGE 6 0 0007	Fisika Listrik, MGO	Physics (Electricity, MWO)	3
ENGE 6 0 0008	Praktikum Fisika Listrik, MGO	Physics (Electricity, MWO)Laboratory	1
		Sub Total	**20**
	Semester 3	**3rd Semester**	
ENGE 6 0 0009	Kimia Dasar	Basic Chemistry	2
ENGE 6 0 0010	Statistik dan Probabilistik	Statistic and Probability	2
ENCV 603 001	Kalkulus lanjut	Advanced Calculus	3
ENCV 603 003	Gambar Konstruksi	Construction Drawing	2
ENCV 603 004	Ilmu Ukur Tanah	Surveying	3
ENEV603001	Teori Properti Material	Material Properties	2
ENEV603002	Mekanika Struktur	Structural Mechanics	3
ENEV603003	Mekanika Fluida	Fluid Mechanics	3
		Sub Total	**20**
	Semester 4	**4th Semester**	
ENCV 604 003	Konstruksi Bangunan	Building Construction	3
ENCV 604 005	Mekanika Tanah Dasar	Basic Soil Mechanics	3
ENEV604001	Mekanika Benda Padat	Solid Mechanics	3
ENEV604002	Hidrolika Teknik Lingkungan	Environmental Engineering Hydraulics	3
ENEV604003	Kimia Lingkungan	Environmental Chemistry	3

ENEV604004	Permasalahan Lingkungan Dalam Isu Global	Environmental Global issues	2
ENEV604005	Mikrobiologi Lingkungan	Environmental Microbiology	2
ENEV604006	Thermodinamika	Thermodynamics	2
		Sub Total	**21**
	Semester 5	**5th Semester**	
ENEV605001	Tata Kota dan Sanitasi	Urban Planning and Sanitation	3
ENEV605002	Perencanaan Struktur Bangunan Teknik Lingkungan	Structural Design of Environmental Engineering Facilities	3
ENEV605003	Perancangan Jaringan Bidang Teknik Lingkungan	Water Supply and Sewerage Network Design	3
ENEV605004	Perancangan Pengelolaan Limbah Padat Terpadu	Integrated Solid Waste Management Design	3
ENEV605005	Unit Operasi dan Proses	Unit Operation and Process	4
ENEV605006	Laboratorium Lingkungan	Environmental Laboratory	3
		Sub Total	**19**
	Semester 6	**6th Semester**	
ENGE 6 0 0011	Ekonomi Teknik	Engineering Economics	3
ENGE 6 0 0012	K3LL	Health, Safety and Environmental Protection	2
ENEV606001	Manajemen Proyek Teknik Lingkungan	Project Management	
ENEV606002	Perancangan Bangunan Pengolahan Air Bersih	Water Treatment Design	3
ENEV606003	Perancangan Bangunan Pengolahan Air Buangan Domestik	Domestic Waste Water Treatment Design	3
ENEV606004	Amdal dan ISO	EIA and ISO	3
		Sub Total	**14**
	Semester 7	**7th Semester**	
ENEV607001	Pengolahan Limbah Industri dan Bahan Buangan Berbahaya	Industrial and Hazardous waste Treatment	3
ENEV607002	Pencemaran Udara	Air Pollution	3
ENEV607003	Kerja Praktek	Internship	3
ENEV607004	Metodologi Penelitian dan Seminar TL	Research Methodology & Proposal	1
	Mata Kuliah Pilihan Bebas	Elective Course	6
	Mahasiswa memililih 12 sks mata kuliah pilihan (1) pada program S2 Teknik Sipil atau (2) dari program studi lain di lingkungan Universitas Indonesia	Students choose 12 credits of elective courses offered by : (1) undergraduate/postgraduate program of Civil Engineering or (2) other study program in Universitas Indonesia	
		Sub Total	**16**
	Semester 8	**8th Semester**	
ENEV608001	Kewirausahaan	Enterpreneurship	2
ENEV600003	Skripsi	Final Project	4
	Mata Kuliah Pilihan Bebas	Elective Course	6

	Mahasiswa memililih 12 sks mata kuliah pilihan (1) pada program S2 Teknik Sipil atau (2) dari program studi lain di lingkungan Universitas Indonesia	Students choose 12 credits of elective courses offered by : (1) undergraduate/postgraduate program of Civil Engineering or (2) other study program in Universitas Indonesia	
		Sub Total	**12**

Elective Course Master Program Civil Engineering Stream Environmental Engineering

Code	Semester 7	7th Semester	
ENCV801501	Man. Resiko Lingkungan	Environmental Risk Management	3
ENCV801502	Teknologi pengolahan limbah padat	Solid Waste Process Technology	3
ENCV803501	Manajemen Kualitas Air Limbah dan Perkotaan	Urban water Quality Management	3
ENCV803502	Audit Lingkungan	Environmental Audit	3
ENCV803503	Kimia Lingkungan Lanjut	Advanced Environmental Chemistry	3
	Semester 8	**8th Semester**	
ENCV802501	Kontaminasi dan remediasi tanah	Contaminating and Soil Remediation	3
ENCV802502	Rekayasa Air Limbah Lanjutan (PFKB)	Advanced Waste Water Engineering	3
ENCV802503	Limbah Menjadi Energi	Waste to Energy	3
ENCV802504	Kontrol Emisi	Emission Control	3
ENCV802505	Efisiensi Sumberdaya dengan Teknologi _ Analisis Daur Hidup (LCA)	Technology of Resources Efficiency - Life Cycle Analysis (LCA)	3
ENCV802506	Pencegahan Pencemaran	Pollution Prevention	3
ENCV802507	Dinamika Sistem Lingkungan	Environmental System Dynamics	3

4.3. UNDERGRADUATE PROGRAM IN MECHANICAL ENGINEERING

Program Specification

1.	**Awarding Institution**	Universitas Indonesia Double Degree: Universitas Indonesia and Partner University	
2.	**Teaching Institution**	Universitas Indonesia Double Degree: Universitas Indonesia and Partner University	
3.	**Programme Tittle**	Undergraduate Program in Mechanical Engineering	
4.	**Class**	Regular, Parallel and International	
5.	**Final Award**	Sarjana Teknik (S.T) Double Degree: Sarjana Teknik (S.T) and Bachelor of Engineering (B.Eng)	
6.	**Accreditation / Recognition**	BAN-PT: A Accredited - AUN-QA	
7.	**Language(s) of Instruction**	Bahasa Indonesia and English	
8.	**Study Scheme (Full Time / Part Time)**	Full Time	
9.	**Entry Requirements**	High school /equivalent, or D3 / Polytechnique / equivalent, AND pass the entrance exam.	
10.	**Study Duration**	Designed for 4 years	
	Type of Semester	Number of Semester	Number of weeks / semester
	Regular	8	17
	Short (optional)	3	8
11.	**Graduate Profiles:** Competent engineering graduates who have abilities to design and analyze the element and system in the field of mechanical engineering and have the excellent attitude and character that can adapt the professional challenge in their work field		
12.	List of Graduates Competency: 1. Ability to analyze the problems in mechanical engineering field by applying the basic knowledge of mathematics, numerical method, statistical analysis and basic science (physics, chemistry and life science), as well as information technology 2. Ability to design component, system and/or thermofluid process and mechanical system to fulfill the realistical needs, for example law, economics, environment, social, politics, health and safety, sustainability and to understand and/or to use potential local and national resources in global perspective 3. Ability to analyze the scientific problems by conducting research and to publish the results, including the data analysis of the results using the statistical principles 4. Ability to identify, to formulate, to analyze and to solve the engineering problems by applying the principles and calculation in mechanical elements and system design process 5. Ability to use the method, skill and modern engineering tools that used for engineering practice such as material selection and manufacturing process, automation system and computer aided mechanical design 6. Ability to communicate effectively by visual, writing and also verbal 7. Ability to design, to plan, to conduct and to evaluate the task for the given boundary condition 8. Ability to work effectively in individual and multidiscipline or multicultural team 9. Ability to be responsible to the society and to obey the professional ethics in solving engineering problems 10. Ability to conduct life long learning including to access the knowledge on the relevant current issues		

12	**As a Universitas Indonesia student, every graduate of Mechanical Engineering Undergraduate Program should have the following compenteces as follow:** 1. Able to use information and communication technology; 2. Able to think critically, creatively, and innovatively and have intellectual curiosity to solve the individual and group problems; 3. Able to use verbal and writing communication in good bahasa Indonesia and English for academic or non-academic acitivity; 4. Has an integrity and able to respect others; 5. Able to identify entrepreneurship efforts which show innovation and autonomy based on ethics		
13	**Classification of Subjects**		
No.	**Classification**	**Credit Hours (SKS)**	**Percentage**
i	University General Subjects	18	12,5 %
ii	Basic Engineering Subjects	30	20,8 %
iii	Core Subjects	68	47,2 %
iv	Elective Subjects	16	11,1 %
v	Internship, Seminar, Undergraduate Thesis, Project	12	8,4 %
	Total	144	100 %
14.	Total Credit Hours to Graduate		144 SKS

Career Prospects

Graduates of Mechanical Engineering has devoted itself in various fields, including mechanical element and system engineer (mechanical system, thermal and fluid, material and production process), government, process plan supervisor, construction, operation and maintenance, leader and instructor of community development, technical project inspector, Sales & Service Engineer, Entrepreneur and Adjuster

COURSE STRUCTURE UNDERGRADUATE PROGRAM MECHANICAL ENGINEERING

KODE	MATA AJARAN	SUBJECT	SKS
	Semester 1	**1st Semester**	
UIGE610002	MPK Terintegrasi B	Integrated Character Building Subject B	6
UIGE610003	Bahasa Inggris	English	3
ENGE600001	Kalkulus 1	Calculus 1	3
ENGE600005	Fisika Dasar 1 (Mekanika dan Panas)	Basic Physics 1 (Mechanic & Heat)	3
ENGE600006	Praktikum Fisika Dasar 1	Laboratory Experiment for Basic Physics 1	1
ENME601001	Pengantar Teknik Mesin	Introduction to Mechanical Engineering	2
ENME601002	Menggambar Teknik	Engineering Drawing	2
		Sub Total	**20**
	Semester 2	**2nd Semester**	
UIGE610001	MPK Terintegrasi A	Integrated Character Building Subject A	6
UIGE610010-5	MPK Agama	Religion	2
ENGE600002	Kalkulus II	Calculus 2	3
ENGE600007	Fisika Dasar 2 (Listrik, Magnet, Gelombang, dan Optik)	Basic Physics 2 (Electrical, Magnet, Wave, and Optic)	3
ENGE600008	Praktikum Fisika Dasar 2 (Listrik, Magnet, Gelombang, dan Optik)	Laboratory Experiment for Basic Physics 2 (Electrical, Magnet, Wave, and Optic)	1
UIGE6100XX	MPK Olahraga/Seni	Sport/Art	1
ENME602003	Menggambar Mesin	Mechanical Drawing	2
ENME602004	Statika Struktur	Engineering Statics	2
		Sub Total	**20**
	Semester 3	3rd Semester	
ENGE600004	Aljabar Linier	Linear Algebra	4
ENGE600009	Kimia Dasar	Basic chemistry	2
ENGE600010	Statistik dan Probabilitas	Statistics and Probability	2
ENME603005	Material Teknik	Engineering Material	2
ENME603006	Visualisasi Pemodelan Mesin	Mechanical Modelling and Visualization	2
ENME603007	Mekanika Kekuatan Material	Strength of Materials	2
ENME603008	Termodinamika Dasar	Basic Thermodynamics	4
ENMT 6 0 3 008	Termodinamika Material	Thermodynamics of Materials	3
		Sub Total	**18**
	Semester 4	4th Semester	
ENME600009	Kinematika dan Dinamika	Kinematics and Dynamics	4
ENME604010	Proses Manufaktur dan Pemilihan Material	Material Selection and Manuf. Process	4
ENME604011	Mekanika Fluida Dasar	Basic Fluid Mechanics	4
ENME604012	Perancangan Mekanikal	Mechanical Design	4
ENME600013	Matematika Teknik	Engineering Mathematics	4
		Sub Total	**20**
	Semester 5	5th Semester	
ENME605014	Getaran Mekanis	Mechanical Vibration	2

ENME605015	Pengukuran dan Metrologi	Measurement and Metrology	2
ENME600016	Metode Numerik	Numerical Method	2
ENME605017	Perpindahan Kalor dan Massa	Heat and Mass Transfer	4
ENME605018	Sistem Fluida	Fluid System	3
ENME605019	Pengendalian Sistem	Control System	4
ENME600001	Tugas Merancang I	Design Assignment 1	2
ENME600007	Praktikum Proses Produksi	Laboratory Experiment of Production Process	1
		Subtotal	**20**
	Semester 6	**6th Semester**	
ENGE 600012	K3L (Kesehatan, Keselamatan, dan Lindung Lingkungan)	Health, Safety and Enviroment	2
ENME606020	Pemeliharaan dan Pemantauan Kondisi Mesin	Maintenence and Condition Monitoring	3
ENME606021	Konversi dan Konservasi Energi	Energy Conversion and Conservation (ECC)	2
ENME606022	Mekatronika	Mechatronics	4
ENME606023	Teknik Tenaga Listrik	Electrical Power Engineering	2
ENME606024	Ilmu Hayat	Life Science for Engineer	2
ENME600002	Tugas Merancang II	Design Assignment 2	2
ENME600008	Praktikum Pengukuran dan Metrologi	Laboratory Experiment for Measurement and Metrology	1
		Subtotal	**18**
	Semester 7	**7th Semester**	
ENME600003	Kerja Praktek	On the Job Training	2
ENME600004	Seminar	Seminar	1
ENME600009	Praktikum Konversi dan Konservasi Energi	Laboratory Experiment for ECC	1
ENME600010	Praktikum Teknik Tenaga Listrik	Laboratory Experiment for Electrical Power Engineering	1
	Pilihan # 1	Elective # 1	4
	Pilihan # 2	Elective # 2	4
		Subtotal	**13**
	Semester 8	8th Semester	
ENME600005	Skripsi	Final Project	5
ENME600006	Kapita Selekta Industrial	Industrial Seminar	2
	Pilihan # 3	Elective # 3	4
	Pilihan # 4	Elective # 4	4
		Subtotal	**15**
		TOTAL	**144**

ELECTIVES

KODE	MATA AJARAN PILIHAN / ELECTIVES SEMESTER 7		SKS
	MATA AJAR	SUBJECT	
ENME803105	Motor Pembakaran Dalam	Internal Combustion Engine	4

ENME803106	Pengukuran dan Visualisasi Aliran Terapan	Applied Flow Measurement and Visualization	4
ENME803107	Aplikasi CFD	CFD Application	4
ENME803108	Teknik Refrijerasi	Refrigeration Engineering	4
ENME803104	Pembangkitan Daya Termal	Thermal Power Generation	4
ENME803115	Sistem Ruang Bersih	Clean Room	4
ENME803124	Audit Energi	Energy Audit	4
ENME803134	Dinamika Api dalam Ruang dan Pemodelan	Enclosure Fire Dynamics and Modelling	4
ENME803143	Kegagalan Mekanikal	Mechanical Failure	4
ENME803145	Pengembangan Produk Komposit	Composite Product Development	4
ENME803147	Perancangan dan Pengembangan Produk Edukasi	Toy Production Design	4
ENME803153	Sistem Machine Vision	Machine Vision System	4
ENME803154	Sistem Manajemen Produksi dan Mutu	Quality and Production Management System	4
ENME803161	Proses Permesinan Mikro	Micro-machining	4
ENME803167	Teknologi Mutakhir Kendaraan	Modern Vehicle Technology	4
ENME803195	Peralatan Pengeboran Minyak dan Gas	Oil and Gas Drilling Equipment	4
ENME803196	Propulsi Jet dan Roket	Jet and Rocket Propulsion	4
ENME803174	Manajemen Risiko	Risk Management	4

KODE	MATA AJARAN PILIHAN / ELECTIVES SEMESTER 8		SKS
	MATA AJAR	SUBJECT	
ENME804110	Teknik Pembakaran	Combustion Engineering	4
ENME804109	Rekayasa Penukar Kalor dan Massa	Heat and Mass Transfer Engineering	4
ENME804111	Teknik Aerodinamika	Aerodynamics Engineering	4
ENME801113	Sistem Ventilasi dan Tata Udara	Ventilation and Air Conditioning System	4
ENME804118	Perancangan Sistem Mekanikal Bangunan Gedung	Mechanical system for Building	4
ENME802103	Optimasi Sistem Energi	Energy System Optimization	4
ENME804138	Evaluasi dan Pemeliharaan Sistem Proteksi Kebakaran	Evaluation and Maintenance of Fire Protection System	4
ENME804148	Perancangan untuk Manufaktur dan Perakitan	Design For Manufacture and Assembly	4
ENME804149	Kebisingan dan Getaran	Noise and Vibration	4
ENME804155	CAD/CAM	CAD/CAM	4
ENME804156	Penilaian Kinerja Manufaktur	Manufacturing Performance Assesment	4
ENME802152	Otomasi dan Robotika	Automation and Robotics	4
ENME804168	Teknik Kendaraan Rel	Railway Vehicle Engineering	4
ENME804197	Mesin dan Peralatan Pengangkat	Handling and Construction Equipment	4
ENME804198	Sistem Kendali dan Stabilitas Pesawat Terbang	Aircraft Stability and Control	4
ENME804190	Teknik Las Lanjut	Advanced Welding Engineering	4

COURSE STRUCTURE INTERNATIONAL UNDERGRADUATE MECHANICAL ENGINEERING

KODE	SUBJECT	SKS
	1st Semester	
ENME611001	Introduction to Mechanical Engineering	2
UIGE610002	Academic Writing	3
ENGE610001	Calculus 1	3
ENGE610005	Basic Physics 1 (Mechanic & Heat)	3
ENGE610006	Laboratory Experiment for Basic Physics 1	1
ENME611002	Engineering Drawing	2
ENGE610010	Statistics and Probabilistic	2
ENGE610004	Linear Algebra	4
	Subtotal	**20**
	2nd Semester	
UIGE61000X	Religion	2
ENGE610002	Calculus 2	3
ENGE610007	Basic Physics 2 (Electrical, Magnet, Wave, and Optic)	3
ENGE610008	Laboratory Experiment for Basic Physics 2 (Electrical, Magnet, Wave, and Optic)	1
UIGE6000XX	Sport/Art	1
ENME612003	Mechanical Drawing	2
ENME612004	Engineering Statics	2
ENME612005	Engineering Material	2
ENGE610009	Basic chemistry	2
	Subtotal	**18**
	3rd Semester	
ENME610013	Engineering Mathematics	4
ENME613006	Mechanical Modelling and Visualization	2
ENME613007	Strength of Materials	2
ENME614024	Life Science for Engineer	2
ENME613008	Basic Thermodynamics	4
ENME613010	Material Selection and Manuf. Process	4
ENME613015	Measurement and Metrology	2
	Subtotal	**20**
	4th Semester	
ENME610009	Kinematics and Dynamics	4
ENME610007	Laboratory Experiment of Production Process	1
ENME614011	Basic Fluid Mechanics	4
ENME614012	Mechanical Design	4
	Health, Safety and Enviroment	2
ENME610016	Numerical Method	2
ENME610008	Laboratory Experiment for Measurement and Metrology	1
	Subtotal	**18**

	5th Semester	
UIGE610002	Integrated Character Building Subject B	6
ENME615014	Mechanical Vibration	2
ENME615017	Heat and Mass Transfer	4
ENME615018	Fluid System	3
ENME615019	Control System	4
ENME610001	Design Assignment 1	2
	Subtotal	**21**
	6th Semester	
UIGE610001	Integrated Character Building Subject A	6
ENME616020	Maintenence and Condition Monitoring	3
ENME616021	Energy Conversion and Conservation	2
ENME616022	Mechatronics	4
ENME610002	Design Assignment 2	2
ENME616023	Electrical Power Engineering	2
	Subtotal	**19**
	7th Semester	
ENME610009	Laboratory Experiment for Energy Conversion and Conservation	1
ENME610010	Laboratory Experiment for Electrical Power Engineering	1
ENME610003	On the Job Training	2
ENME610004	Seminar	1
	Elective # 1	4
	Elective # 2	4
	Subtotal	**13**
	8th Semester	
ENME610005	Final Project	5
ENME610006	Industrial Seminar	2
	Elective # 3	4
	Elective # 4	4
	Subtotal	**15**

ELECTIVE COURSES

KODE	ELECTIVES FOR 7th SEMESTER	SKS
	SUBJECT	
ENME803105	Internal Combustion Engine	4
ENME803106	Applied Flow Measurement and Visualization	4
ENME803107	CFD Application	4
ENME803108	Refrigeration Engineering	4
ENME803104	Thermal Power Generation	4
ENME803115	Clean Room	4
ENME803124	Energy Audit	4
ENME803134	Enclosure Fire Dynamics and Modelling	4

ENME803143	Mechanical Failure	4
ENME803145	Composite Product Development	4
ENME803147	Toy Production Design	4
ENME803153	Machine Vision System	4
ENME803154	Quality and Production Management System	4
ENME803161	Micro-machining	4
ENME803167	Modern Vehicle Technology	4
ENME803195	Oil and Gas Drilling Equipment	4
ENME803196	Jet and Rocket Propulsion	4
ENME803174	Risk Management	4

KODE	ELECTIVES FOR 8th SEMESTER	SKS
	SUBJECT	
ENME804110	Combustion Engineering	4
ENME804109	Heat and Mass Transfer Engineering	4
ENME804111	Aerodynamics Engineering	4
ENME801113	Ventilation and Air Conditioning System	4
ENME804118	Mechanical system for Building	4
ENME802103	Energy System Optimization	4
ENME804138	Evaluation and Maintenance of Fire Protection System	4
ENME804148	Design For Manufacture and Assembly	4
ENME804149	Noise and Vibration	4
ENME804155	CAD/CAM	4
ENME804156	Manufacturing Performance Assesment	4
ENME802152	Automation and Robotics	4
ENME804168	Railway Vehicle Engineering	4
ENME804197	Handling and Construction Equipment	4
ENME804198	Aircraft Stability and Control	4
ENME804190	Advanced Welding Engineering	4

Curriculum Design for Queensland University of Technology (QUT) 2+2

For Mechanical Engineering, the advanced standing is as follows (based on 2009 mechanical course structure at UI):

UI Units	QUT Units
MCS110802l + ENG100808l + ENG100807l + MCS210803l	ENB100, ENB200, ENB150
ENG100801l + ENG100804l + ENG200801l + MCS210810l	MAB126, MAB127, MAB233
ENG100805l+ MCS120801l	ENB130, ENB110
ENG200802l + EES21089l + EES210914l	ENB120
MCS220801l	ENB211
MCS120801l + MCS220802l + MCS320801l	ENB231, ENB331
MCS220804l	ENB221
MCS210802l	ENB222

MCS210803l + MCS220803l	ENB212, ENB215

Provisional Program at QUT

February Entry

Semester 1, Year 1		Semester 2, Year 1	
Code	**Course Title**	**Code**	**Course Title**
ENB311	Stress Analysis	ENB205	Electrical and Computer Engineering
ENB312	Dynamics of Machinery	ENB321	Fluids Dynamics
ENB316	Design of Machine Elements		Minor/Second Major 4
	Minor/Second Major 1		Minor/Second Major 2

Semester 1, Year 2		Semester 2, Year 2	
Code	**Course Title**	**Code**	**Course Title**
ENB421	Thermodynamics 2	ENB317	Design and Maintenance of Machinery
BEB801	Project 1	ENB313	Automatic Control
SEB400	Foundations of Research	BEB802	Project 2
	Minor/Second Major 3		Advance Selective

July Entry (preferred)

		Semester 2, Year 1	
		Code	**Course Title**
		ENB205	Electrical and Computer Engineering
		ENB321	Fluids Dynamics
			Minor/Second Major 4
			Minor/Second Major 2

Semester 1, Year 2		Semester 2, Year 2	
Code	**Course Title**	**Code**	**Course Title**
ENB311	Stress Analysis	ENB317	Design and Maintenance of Machinery
ENB312	Dynamics of Machinery	ENB313	Automatic Control
ENB316	Design of Machine Elements	BEB801	Project 1
	Minor/Second Major 1		Advance Selective

Semester 1, Year 3			
Code	**Course Title**		
ENB421	Thermodynamics 2		
BEB802	Project 2		
SEB400	Foundations of Research		
	Minor/Second Major 3		

New QUT Units Name:
BEB801 Project 1

Synopsis: This unit is usually taken in the final year of study. Students complete an individual project involving the application of skills and knowledge attained during the earlier years of their degree program. For some students, this unit will be taken one of two 'project' units related to the same student project; in such cases this unit may be a pre-requisite or co-requisite to the second unit (or a follow-on from the first unit). The final 'deliverable' for this unit may vary for each discipline and details will be provided in lectures/tutorials and on the Blackboard website.

BEB802 Project 2
Synopsis: This unit is usually taken in the final year of study, and is only taken by students completing a two unit project. Students complete an individual project involving the application of skills and knowledge attained during the earlier years of their degree program. This unit will be taken as the second of two 'project' units related to the same student project.

SEB400 Foundations of Research
Synopsis: This unit facilitates the acquisition of knowledge and skills essential to engaging with, and conducting research. This unit introduces you to the research process, project planning and management, and methodologies used in science, information technology, engineering, mathematics, urban development and property economics. The learning acquired in this unit will be applied to your project which is further developed in the Research units.

Curriculum Design for University of Queensland (UQ) 2+2

Course list for the Mechanical Engineering Single Major

Show information for:

Information valid for students commencing 2016

Mechanical Engineering
Students must complete for the BE(Hons) (Mechanical Engineering) a Single Major (Plan code: MECHAX2342) or Extended Major (Plan code: MECHAY2342), #64 comprising one of the following:

1. a. a major - #50, comprising all compulsory courses listed in Part A of the Mechanical Engineering lists; and
   b. balance from electives, being courses from the BE(Hons) list or other courses approved by the executive dean, with
      (i) a minimum of #6 from courses on the BE(Hons) list, other than courses on the Mechanical Engi neering Part B0 list, and
      (ii) a maximum of #4 from courses from part B0 of the Mechanical Engineering list, and
      (iii) a maximum of #4 from level one courses not on the BE(Hons) list;

OR

2. a. an extended major - #60, comprising
      (i) #50 being all courses in part A compulsory;plus
      (ii) #10 from part B Electives under Extended Major; and
   b. balance from electives, being courses from the BE(Hons) list or other courses approved by the Executive Dean.

Part A – Compulsory

Year 1, Semester 1		
Course Code	**Units**	**Course Title**
ENGG1100	2	Engineering Design
Year 1, Semester 1 or 2		
Course Code	**Units**	**Course Title**
ENGG1300	2	Introduction to Electrical Systems
ENGG1400	2	Engineering Mechanics: Statics & Dynamics
ENGG1500	2	Engineering Thermodynamics
MATH1051	2	Calculus & Linear Algebra I [1]
Year 1, Semester 2		
Course Code	**Units**	**Course Title**
ENGG1200	2	Engineering Modelling & Problem Solving
MATH1052	2	Multivariate Calculus & Ordinary Differential Equations
Year 2 Semester 1		
Course Code	**Units**	**Course Title**
MATH2000 MATH2001	2 or 2	Calculus & Linear Algebra II Advanced Calculus and Linear Algebra
MECH2300	2	Structures & Materials
MECH2305	2	Introduction to Engineering Design and Manufacturing
MECH2410	2	Fundamentals of Fluid Mechanics

Year 2 Semester 2		
Course Code	**Units**	**Course Title**
MECH2100	2	Machine Element Design
MECH2210	2	Intermediate Mechanical & Space Dynamics
MECH2700	2	Engineering Analysis I
Year 3 Semester 1		
Course Code	**Units**	**Course Title**
MATH2010	1	Analysis of Ordinary Differential Equations
MECH3300	2	Finite Element Method & Fracture Mechanics
MECH3400	2	Thermodynamics & Heat Transfer
MECH3600	2	Engineering Management & Communication
STAT2201	1	Analysis of Engineering & Scientific Data
Year 3 Semester 2		
Course Code	**Units**	**Course Title**
MECH3100	2	Mechanical Systems Design
MECH3200	2	Advanced Dynamics & Vibrations
MECH3410	2	Fluid Mechanics
Year 3 or 4 #2 from -		
Course Code	Units	Course Title
MECH3250	2	Engineering Acoustics

MECH3750	2	Engineering Analysis II
ENGY4000	2	Energy Systems
METR3100	2	Sensors & Actuators
Year 4		
Course Code	**Units**	**Course Title**
METR4201	2	Introduction to Control Systems
and at least #4 from -		
Course Code	Units	Course Title
ENGG4011	6	Professional Engineering Project
MECH4500	4	Engineering Thesis [2]
MECH4501	4	Engineering Thesis [2]
MECH4552	4	Major Design Project [2]
Part B Electives Part B0 - Preparatory Mathematics & Science Electives		
CHEM1090	2	Introductory Chemistry [3]
MATH1050	2	Mathematical Foundations [1] [4]
PHYS1171	2	Physical Basis of Biological Systems [5]

Extended Major

Students enrolled in the extended major are required to obtain the major plus an additional #10 from introductory or advanced electives from Part B1 or B2, including a minimum of #8 from Part B2. Students participating in the CEED program and undertaking #6 ENGG4011 are only required to obtain an additional #8 towards the extended major, including a minimum of #6 from Part B2.

B1 - Introductory Electives		
Course Code	Units	Course Title
CHEM1100	2	Chemistry 1
CSSE1001	2	Introduction to Software Engineering
ENGG1600	2	Introduction to Research Practices - The Big Issues
PHYS1002	2	Electromagnetism and Modern Physics
B2 - Advanced Electives		
Course Code	Units	Course Title
AERO4300	2	Aerospace Composites
CHEE4302	2	Electrochemistry & Corrosion
ELEC2003	2	Electromechanics & Electronics
ENGG4103	2	Engineering Asset Management
ENGG4900	2	Professional Practice and the Business Environment
ENGY4000	2	Energy Systems
FIRE3700	2	Introduction to Fire Safety Engineering
MECH3250	2	Engineering Acoustics
MECH3305	2	Science & Engineering of Metals
MECH3750	2	Engineering Analysis II
MECH4301	2	Materials Selection
MECH4304	2	Net Shape Manufacturing
MECH4450	2	Aerospace Propulsion

MECH4470	2	Hypersonics & Rarefied Gas Dynamics
MECH4480	2	Computational Fluid Dynamics
MECH4552	4	Major Design Project [2]
MECH4800	2	Space Engineering
MECH4950	2	Special Topics C
MECH4951	1	Special Topics D
METR3100	2	Sensors & Actuators
METR4202	2	Advanced Control & Robotics
TIMS3309	2	Fundamentals of Technology and Innovation Management

End notes

- [1] Students without at least a Sound Achievement in Senior Maths C are required to take MATH1050 as an elective before MATH1051
- [2] This course is offered over more than one semester. Enrol in the same course code in each semester.
- [3] CHEM1090 is not available for students with a Sound Achievement or higher in Senior Chemistry or equivalent.
- [4] MATH1050 is not available for students with a High Achievement or higher in Senior Maths C. MATH1050 is not available to students who have passed MATH1051 and/or MATH1052.
- [5] PHYS1171 is not available for students with a Sound Achievement or higher in Senior Physics or equivalent.

4.4. UNDERGRADUATE PROGRAM IN NAVAL ARCHITECTURE AND MARINE ENGINEERING

Program Specification

1.	**Awarding Institution**	Universitas Indonesia	
2.	**Teaching Institution**	Universitas Indonesia	
3.	**Programme Tittle**	Undergraduate Program in Naval Architecture and Marine Engineering	
4.	**Class**	Regular	
5.	**Final Award**	Sarjana Teknik (S.T)	
6.	**Accreditation / Recognition**	BAN-PT: A - Accredited AUN-QA	
7.	**Language(s) of Instruction**	Bahasa Indonesia and English	
8.	**Study Scheme (Full Time / Part Time)**	Full Time	
9.	**Entry Requirements**	High school /equivalent AND pass the entrance exam.	
10.	**Study Duration**	Designed for 4 years	
	Type of Semester	Number of Semester	Number of weeks / semester
	Regular	8	17
	Short (optional)	3	8
11.	**Graduate Profiles:** A Bachelor in Engineering with abilities to design ship structure and system, and excellence in leadership and professional characters.		
12.	**List of Graduates Competency:** 1. Ability to apply basic knowledge of mathematics, numerical methods, statistical analysis, basic sciences (physics and chemistry), as well as information technology required to achieve competence in the discipline of Maritime Engineering (Main competency) 2. Ability to design by applying methods, skills and modern engineering software required for practical engineering problems such as materials selection and process, as well as ship designing using a computer (Main competency) 3. Ability to carry out analysis for problem solving in the field of Maritime Engineering by applying calculation and principles in ship designing process and ship system (Main competency) 4. Ability to evaluate scientific problem by carrying out research and report the results, including statistical data analysis obtained for decision making in the field of Marine Engineering (Main competency) 5. Ability to identify impacts as a result of solution in the field of Marine Engineering with respect to sustainable development (Supporting competency) 6. Ability to think critically, creatively, and innovatively as well as to maintain intellectual curiosity for problem solving in individual and group level (UI) 7. Ability to communicate effectively in visual, written, and verbal (Supporting competency) 8. Ability to apply professional ethics related to law, economy, environment, social, politic, health, and safety with responsibility and integrity (Supporting competency) 9. Ability to carry out life-long learning including access to knowledge of relevant recent issues (Supporting competency) 10. Ability to apply financial principles and management as well as entrepreneurship in the field of Marine Engineering		
12	**As a Universitas Indonesia student, every graduate of Mechanical Engineering Undergraduate Program should have the following compenteces as follow:** 1. Able to use information and communication technology; 2. Able to think critically, creatively, and innovatively and have intellectual curiosity to solve the individual and group problems; 3. Able to use verbal and writing communication in good bahasa Indonesia and English for academic or non-academic acitivity; 4. Has an integrity and able to respect others; 5. Able to identify entrepreneurship efforts which show innovation and autonomy based on ethics		

13	Classification of Subjects		
No.	Classification	Credit Hours (SKS)	Percentage
i	University General Subjects	18	12.5 %
ii	Basic Engineering Subjects	24	16.67 %
iii	Core Subjects	74	51.39 %
iv	Elective Subjects	12	8.33 %
v	Ship Design Assignment 1, Ship Design Assignment 2, Ship Design Assignment 3, On The Job Training, Seminar, Undergraduate Thesis	16	11.11 %
	Total	144	100 %
14.	Total Credit Hours to Graduate		144 SKS

Career Prospects

Naval architecture and marine engineering graduates have devoted themselves to various fields such as: maritime industry, government classification, research institutes, industrial engineering, automotive industry, shipbuilding industry, oil and gas industry, heavy machinery industry, educational institutions and other industries both domestically and internationally.

DESCRIPTION

Naval architecture and Marine Engineering study program was developed with a purpose, namely: producing graduates who have the attitude of leadership and excellence in scholarship and professionalism that have ability to analyze and synthesize characteristics of shipbuilding technology that includes design and planning process and ship machinery systems, as well as managing the installation and production systems ship, and were able to analyze and solve any scientific problem, work together in teams, and able to develop themselves and their knowledge.
The basic curriculum 2012 in Bachelor of Naval architecture and Marine Engineering which can be seen in the figure shows the grouping and the relationship between subject groups.
Before reaching a Bachelor's degree from a total of 144 SKS, a student in Marine Engineering must complete the university courses (18 SKS), basic courses (75 SKS) which consists of basic engineering (26 SKS) and basic of marine engineering (49 SKS), and marine technical skills courses (33 SKS) consisting of core courses (21 SKS), elective courses (12 SKS), and the remaining 18 SKS in the form of assigment, intership and final project.
The curriculum was designed and developed to make the learning process is able to produce graduates who are competent in the field of Naval architecture and marine engineering with characteristics in accordance with the purpose of education, that is :

1. Having a strong base of engineering knowledge through the sciences of mathematics, physics, and chemistry
2. The ability to design and conduct research to analyze and interpret the data.
3. The ability to identify, formulate and solve problems in the field of shipbuilding techniques based on a review of the latest issue
4. The ability to design a system, component or process to meet desired needs by considering and implementing aspects of the economy,
5. Knowledge of leadership, ability to communicate well, work together in teams, and develop themselves and their knowledge

COURSE STRUCTURE UNDERGRADUATE PROGRAM
NAVAL ARCHITECTURE & MARINE ENGINEERING

KODE	MATA AJARAN	SUBJECT	SKS
	Semester 1	**1st Semester**	
UIGE610002	MPK Terintegrasi B	Integrated Character Building Subject B	6
UIGE610003	Bahasa Inggris	English	3
ENGE600001	Kalkulus 1	Calculus 1	3
ENGE600005	Fisika Mekanika dan Panas	Physics of Mechanic & Heat	3
ENGE600006	Praktikum Fisika Mekanika dan Panas	Practicum of Physics of Mechanic & Heat	1
ENMR601001	Pengantar Teknik Perkapalan	Introduction to Marine Engineering	2
ENME601002	Menggambar Teknik	Engineering Drawing	2
		Subtotal	**20**
	Semester 2	**2nd Semester**	
UIGE610001	MPK Terintegrasi A	Integrated Character Building Subject A	6
UIGE61001X	Agama	Religion	2
UIGE6100XX	Olahraga/Seni	Sports/Arts	1
ENGE600002	Kalkulus II	Calculus 2	3
ENGE600007	Fisika Listrik, Magnet, Gelombang, dan Optik	Physics of Elec, Magnet, Wave, and Optic	3
ENGE600008	Praktikum Fisika Listrik, Magnet, Gelombang, dan Optik	Practicum of Physics of Elec, Magnet, Wave, and Optic	1
ENMR602002	Visualisasi dan Permodelan Kapal	Ships Visualization and Modelling	3
		Subtotal	19
	Semester 3	3rd Semester	
ENME600013	Matematika Teknik	Engineering Matematics	4
ENGE600009	Kimia Dasar	Basic Chemistry	2
ENME603008	Termodinamika Dasar	Basic Thermodynamics	4
ENGE600004	Aljabar Linier	Linier Algebra	4
ENMR603003	Material Kapal	Ship Material	2
ENMR603004	Teori Bangunan Kapal	Ship Building Theory	2
ENMR603005	Struktur Kapal 1	Ship Structure 1	2
		Subtotal	**20**
	Semester 4	4th Semester	
ENMR604006	Termofluida	Thermofluid	4
ENMR604007	Permesinan Kapal	Ship Machinery	2
ENMR604008	Struktur Kapal 2	Ship Structure 2	4
ENME600016	Metode Numerik	Numeric Method	2
ENMR604009	Hambatan dan Propulsi	Ship Resistance and Propulsion	4
ENMR604010	Hidrodinamika Kapal	Ship Hydrodynamics	2
ENMR600001	Tugas Merancang Kapal 1	Ship Design Assesment 1	2
		Subtotal	**20**

	Semester 5	5th Semester	
ENMR605011	Sistem Fluida dan Perpipaan Kapal	Fluid and Piping System of Ship	2
ENME600009	Kinematika dan Dinamika	Kinematics and Dynamics	4
ENMR605012	Ekonomi Teknik	Engineering Economics	2
ENMR605013	Proses Manufaktur Kapal	Ship Manufacturing Process	2
ENMR605014	Teknik Las	Welding Engineering	2
ENMR605015	Sistem Kelistrikan Kapal	Ship Electrical System	2
ENMR605016	Perancangan Kamar Mesin Kapal	Engine Room Layout Design	2
ENMR600002	Tugas Merancang Kapal 2	Ship Design Assesment 2	4
		Subtotal	**20**
	Semester 6	**6th Semester**	
ENMR605011	Statistik dan Probalistik	Statistic and Probability	2
ENME600009	K3L (Kesehatan, Keselamatan, dan Lindung Lingkungan)	Healthy, Safety and Enviroment	2
ENMR606017	Getaran Kapal	Ship Vibration	2
ENMR606018	Alat Bantu Kapal	Ship Machinery and Equipment	2
ENMR606019	Sistem Elektronika Kapal	Ship Electronic System	2
ENMR606020	Pembangkit Daya Kapal	Ship Power Generation	2
ENMR606021	Pemeliharaan dan Reparasi Kapal	Ship Maintenance and Repair	2
ENMR600003	Tugas Merancang Kapal 3	Ship Design Assesment 3	3
		Subtotal	**17**
	Semester 7	**7th Semester**	
ENME600006	Kapita Selekta Industrial	Capita Selecta Industrial	2
ENMR600004	Kerja Praktek	On the Job Training	2
ENMR607022	Sistem Tata Udara dan Refrigerasi Kapal	Air Conditioning and Refrigeration System of Ship	4
ENMR607023	Survei dan Inspeksi Kapal	Survey and Inspection of Ship	2
ENMR600005	Seminar	Seminar	1
	Pilihan # 1	Elective # 1	4
		Subtotal	**15**
	Semester 8	8th Semester	
ENMR600006	Skripsi	Final Project	5
	Pilihan # 2	Elective # 2	4
	Pilihan # 3	Elective # 3	4
		Subtotal	**13**
		Total	**144**

ELECTIVES

KODE	MATA AJARAN PILIHAN SEMESTER 7		SKS
	MATA AJAR	SUBJECT	
ENME803183	Bangunan Lepas Pantai	Marine and Offshore Structure*	4
ENME803184	Manajemen Transportasi Laut dan Kepelabuhan	Sea Transportation and Port Management *	4
ENME803185	Hukum dan Peraturan Kemaritiman	Maritime Law and regulation*	4

KODE	MATA AJARAN PILIHAN SEMESTER 8		SKS
	MATA AJAR	SUBJECT	
ENME804186	Kapal Khusus	Special Ship Project	4
ENME804187	Manajemen Produksi Kapal	Ship Production Management*	4
ENME802103	Optimasi Sistem Energi	Energy Optimization System	4
ENME804188	Manajemen Energi Maritim	Maritime Energy Management	4
ENME804189	Keselamatan Kemaritiman	Maritime Safety	4
ENME804190	Teknik Las Lanjut	Advanced Welding Engineering	4

4.5. UNDERGRADUATE PROGRAM IN ELECTRICAL ENGINEERING

Program Specification

1.	**Awarding Institution**	Universitas Indonesia Double Degree: Universitas Indonesia and partner university	
2.	**Teaching Institution**	Universitas Indonesia Double Degree: Universitas Indonesia and partner university	
3.	**Programme Tittle**	Undergraduate Program in Electrical Engineering	
4.	**Class**	Regular, Parallel, International	
5.	**Final Award**	Sarjana Teknik (S.T) Double Degree: Sarjana Teknik (S.T) and Bachelor of Engineering (B.Eng)	
6.	**Accreditation / Recognition**	BAN-PT: A accredited AUN-QA	
7.	**Language(s) of Instruction**	Bahasa Indonesia and English	
8.	**Study Scheme (Full Time / Part Time)**	Full Time	
9.	**Entry Requirements**	High school /equivalent, or D3 / Polytechnique / equivalent, AND pass the entrance exam.	
10.	**Study Duration**	Designed for 4 years	
	Type of Semester	Number of Semester	Number of weeks / semester
	Regular	8	17
	Short (optional)	3	8
11.	**Graduate Profiles:** Bachelor of engineering who is able to design both hardware and/or software as solution in electrical engineering problem based on technological advancement in accordance with professional ethics.		
12.	**Expected Learning Outcomes:** General outcomes: 1. Able to design of the hardware. 2. Able to design of the software. 3. Able to handle general issues and specific in electrical engineering. 4. Able to apply the basic principles of mathematics, physics, and statistics in solving electrical engineering. 5. Capable of critical thinking, creative, and innovative and have the intellectual curiosity to solve problems at the level of the individual and the group. 6. Able to identify varieties of entrepreneurial efforts that are characterized by innovation and self-reliance based on ethics. 7. Able to use the language both spoken and written in the Bahasa Indonesia and English for academic or non-academic activities. 8. Able to provide alternative solutions to problems that arise in the environment, society, nation, and country. 9. Able to utilize information communication technology (ICT). Electronics Engineering Stream Outcomes: 1. Able to analyse photonic devices. 2. Able to design advanced electronics circuit. 3. Able to design MEMS. 4. Able to design VLSI circuit. 5. Able to analyse state of the art in the field of electronics and photonics. 6. Able to utilize technological advancement to solve problems related to his/her expertise (stream).		

12.	Telecommunication Engineering Stream Outcomes: 1. Able to design wire and wireless communication equipment system. 2. Able to design communication network system 3. Able to analyse the performance of communication systems on different media. 4. Able to identify the process of information signal processing. 5. Able to examine the development of telecommunications engineering 6. Able to study the latest technology to solve the problem of appropriate areas of expertise (Stream) Control Engineering Stream Outcomes: 1. Able to identify dynamic control system in mathematical equation. 2. Able to design discrete controller. 3. Able to design knowledge-based controller. 4. Able to reverse engineer simple controller. 5. Able to study the latest technology to solve the problem of appropriate areas of expertise (Stream) Electrical Power Engineering Stream: 1. Able to characterize electric power engineering and energy. 2. Able to review the latest technology to solve the problem of electric power and energy fields. 3. Able to analyze the phenomenon of high field to resolve the problems of the field of electric power. 4. Able to itemize the problems of electric power and energy. 5. Able to design simple application in the fields of electric power and energy. 6. Able to study the latest technology to solve the problem of appropriate areas of expertise (Stream). Biomedical Engineering Stream Outcomes: 1. Able to apply the basic principles of biology in field of biomedicine engineering. 2. Able to apply the techniques, skills and modern tools that are necessary in the practice of biomedicine engineering. 3. Able to analyse medical data/information related to the condition of human physiology. 4. Able to make simple medical device design at the level of individuals and groups. 5. Able to process medical signal to improve the performance of a medical device. 6. Able to study the latest technology to solve the problem of appropriate areas of expertise (Stream).

13	**Classification of Subjects**		
No.	**Classification**	**Credit Hours (SKS)**	**Percentage**
i	**University General Subjects**	18	12,5 %
ii	**Basic Engineering Subjects**	18	12,5 %
iii	**Core Subjects**	71	49,31 %
iv	**Stream Subject**	21	14,58 %
iv	**Elective Subjects**	8	5,56 %
v	**Special Subject (Internship, Seminar, Undergraduate Thesis)**	8	5,56 %
	Total	144	100 %
14.	**Total Credit Hours to Graduate**		144 SKS

Career Prospects

The graduates of this program have been employed in various inductrial companies within one month (in average) after the graduation. Some of them are involved in power engineering, IT, electronic, oil & gas, telecommunication and other related inductries. Some of graduates were even employed before the graduation.

Some occupation or job titles that are suitable for this program are electrical engineer, process engineer, control engineer, instrumentation engineer, program manager, project manager, technical manager and professional lecturers.

COURSE STRUCTURE UNDERGRADUATE PROGRAM
ELECTRICAL ENGINEERING

KODE	MATA AJARAN	SUBJECT	SKS
	Semester 1	**1st Semester**	
UIGE600002	MPKT B	Integrated Character Building B	6
UIGE600003	Bahasa Inggris	English	3
ENGE600003	Kalkulus	Calculus	4
ENGE600007	Fisika Listrik, MGO	Physics (Electricity, MWO)	3
ENGE600008	Prak. Fisika Listrik, MGO	Physics (Electricity, MWO) Lab	1
ENEE601001	Pengantar Teknik Elektro	Intro to Electrical Engineering	2
		Subtotal	**19**
	Semester 2	**2nd Semester**	
UIGE600001	MPKT A	Integrated Character Building A	6
UIGE600010 - UIGE600015	Agama	Religion	2
UIGE600020 - UIGE600048	Olah Raga/Seni	Sports/Arts	1
ENGE600004	Aljabar Linier	Linear Algebra	4
ENGE600005	Fisika Mekanika dan Panas	Physics (Mechanics and Thermal)	3
ENGE600006	Prak. Fisika Mekanika dan Panas	Physics (Mechanics and Thermal) Lab	1
ENEE602002	Rangkaian Listrik 1	Electric Circuit 1	3
		Subtotal	**20**
	Semester 3	3rd Semester	
ENEE603003	Rangkaian Listrik 2	Electric Circuit 2	3
ENEE603004	Praktikum Rangkaian Listrik	Electric Circuit Laboratory	1
ENEE603005	Analisis Vektor dan Peubah Kompleks	Vector Analysis Complex Variable	2
ENEE603006	Probabilitas dan Proses Stokastik	Probability and Stochastic Process	3
ENEE603007	Matematika Teknik	Engineering Mathematics	4
ENEE603008	Divais Semikonduktor	Semiconductor Devices	2
ENEE603009	Dasar Sistem Digital + P	Fund. of Digital System & Lab	3
		Subtotal	**18**
	Semester 4	4th Semester	
ENEE604010	Dasar Komputer dan Praktikum	Basic Computer and Laboratory	3
ENEE604011	Rangkaian Elektronika	Electronic Circuits	3
ENEE604012	Praktikum Rangkaian Elektronika	Electronic Circuits Laboratory	1
ENEE604013	Elektromagnetika	Electromagnetics	4
ENEE604014	Sinyal dan Sistem	Signal and Systems	3
ENEE604015	Material Listrik	Electric Materials	2
		Subtotal	**16**
	Semester 5	5th Semester	
ENGE600012	K3LL	HSE Protection	2
ENEE605016	Komputasi Numerik	Numerical Computation	2

ENEE605017	Teknik Telekomunikasi	Telecommunication Engineering	3
ENEE605018	Teknik Tenaga Listrik	Electric Power Engineering	3
ENEE605019	Praktikum Teknik Tenaga Listrik	Electric Power Engineering Lab	1
ENEE605020	Teknik Kendali	ControlEngineering	3
ENEE605021	Praktikum Teknik Kendali	ControlEngineering Laboratory	1
ENEE605022	Algoritma dan Pemrograman	Algorithm and Programming	4
		Subtotal	**19**
	Semester 6	**6th Semester**	
ENEE606023	Kerja Praktik	Internship	2
ENEE606024	Pemodelan dan Simulasi	Modelling and Simulations	2
ENEE606025	Prakt. Teknik Telekomunikasi	Telecommunication Engineering Lab.	1
ENEE606026	Mikroprosesor dan Mikrokontroler	Microprocessor and Microcontroller	4
ENEE606027	Prakt. Mikroprosesor dan Mikrokontroler	Microprocessor and Microcontroller Lab.	1
ENEE606028	Pengukuran Besaran Listrik	Electric Measurements	2
ENEE606029	Praktikum Pengukuran Besaran Listrik	Electric Measurements Laboratory	1
	Peminatan Kelompok Ilmu	Majoring Courses	9
		Subtotal	**22**
	Semester 7	**7th Semester**	
ENEE607030	Seminar	Seminar	2
ENEE607031	Rekayasa dan Kewirausahaan	Engineering Enterpreneurship	2
ENEE607032	Penulisan Ilmiah	Academic Writing	2
	Peminatan Kelompok Ilmu	Majoring Courses	6
	Pilihan	Electives	4
		Subtotal	**16**
	Semester 8	8th Semester	
ENEE608033	Skripsi	Bachelor Theses	4
	Peminatan Kelompok Ilmu	Majoring Courses	6
	Pilihan	Electives	4
		Subtotal	**16**
		TOTAL	**144**

CURRICULUM STRUCTURE TELECOMMUNICATION ENGINEERING STREAM

KODE	MATA AJARAN	COURSE	SKS
	Semester 6	**6th Semester**	
ENEE606023	Kerja Praktik	Internship	2
ENEE606024	Pemodelan dan Simulasi	Modelling and Simulations	2
ENEE606025	Prakt. Teknik Telekomunikasi	Telecommunication Engineering Lab.	1
ENEE606026	Mikroprosesor dan Mikrokontroler	Microprocessor and Microcontroller	4
ENEE606027	Prakt.Mikroprosesor dan Mikrokontroler	Microprocessor & Microcontroller Lab.	1

ENEE606028	Pengukuran Besaran Listrik dan Elektronik	Electric and Electronic Measurements	2
ENEE606029	Praktikum Pengukuran Besaran Listrik	Electric Measurements Laboratory	1
ENEE606301	Teknik Pengkodean dan Aplikasi	Coding Technique and Applications	3
ENEE606302	Jaringan Komunikasi	Communication Networks	3
ENEE606303	Komunikasi Multimedia Pita Lebar	Broadband Multimedia Communications	3
		Subtotal	**22**
Kode	**Semester 7**	**7th Semester**	
ENEE607030	Seminar	Seminar	2
ENEE607031	Rekayasa dan Kewirausahaan	Engineering Enterpreneurship	2
ENEE607032	Penulisan Ilmiah	Academic Writing	2
ENEE607304	Antena dan Propagasi	Antennas and Propagation	3
ENEE607305	Komunikasi Optik	Optical Communications	3
	Pilihan	Electives	4
		Subtotal	**16**
Kode	**Semester 8**	**8th Semester**	
ENEE608033	Skripsi	Bachelor Thesis	4
ENEE608307	Komunikasi Bergerak dan Nirkabel	Mobile and Wireless Communications	3
ENEE608308	Divais Sistem Komunikasi	Communication System Devices	3
	Pilihan	Electives	4
		Subtotal	**14**

CURRICULUM STRUCTURE ELECTRICAL POWER ENGINEERING STREAM

KODE	MATA AJARAN	COURSE	SKS
	Semester 6	**6th Semester**	
ENEE606023	Kerja Praktik	Internship	2
ENEE606024	Pemodelan dan Simulasi	Modelling and Simulations	2
ENEE606025	Prakt. Teknik Telekomunikasi	Telecommunication Engineering Lab.	1
ENEE606026	Mikroprosesor dan Mikrokontroler	Microprocessor and Microcontroller	4
ENEE606027	Prakt.Mikroprosesor dan Mikro-kontroler	Microprocessor & Microcontroller Lab.	1
ENEE606028	Pengukuran Besaran Listrik dan Elektronik	Electric and Electronic Measurements	2
ENEE606029	Praktikum Pengukuran Besaran Listrik	Electric Measurements Laboratory	1
ENEE606101	Konversi Energi Listrik	Electric Energy Conversion	2
ENEE606102	Elektronika Daya dan Praktikum	Power Electronics and Laboratory	3
ENEE606103	Manajemen dan Ekonomi Teknik	Management and Engineering Economy	3
		Subtotal	**21**
Kode	**Semester 7**	**7th Semester**	
ENEE607030	Seminar	Seminar	2
ENEE607031	Rekayasa danKewirausahaan	Engineering Enterpreneurship	2
ENEE607032	Penulisan Ilmiah	Academic Writing	2

ENEE607104	Sistem Tenaga Listrik danPraktikum	Electric Power System and Laboratory	3
ENEE607105	Teknik Tegangan & ArusTinggi +P	High Current & Voltage Eng + Lab	3
ENEE607106	Instalasi Listrik Bangunan	Building Electric Installation	2
	Pilihan	Electives	4
		Subtotal	**18**
Kode	**Semester 8**	**8th Semester**	
ENEE608033	Skripsi	Bachelor Thesis	4
ENEE608108	Distribusi & Transmisi Tenaga Listrik	Electric Power Trans. & Distribution	3
ENEE608109	Proteksi Sistem Tenaga Listrik	Electric Power System Protection	2
	Pilihan	Electives	4
		Subtotal	**13**

CURRICULUM STRUCTURE ELECTRONICS ENGINEERING STREAM

KODE	MATA AJARAN	COURSE	SKS
	Semester 6	**6th Semester**	
ENEE606023	Kerja Praktik	Internship	2
ENEE606024	Pemodelan dan Simulasi	Modelling and Simulations	2
ENEE606025	Prakt. Teknik Telekomunikasi	Telecommunication Engineering Lab.	1
ENEE606026	Mikroprosesor dan Mikrokontroler	Microprocessor and Microcontroller	4
ENEE606027	Prakt.Mikroprosesor dan Mikrokontroler	Microprocessor & Microcontroller Lab.	1
ENEE606028	Pengukuran Besaran Listrik dan Elektronik	Electric and Electronic Measurements	2
ENEE606029	Praktikum Pengukuran Besaran Listrik	Electric Measurements Laboratory	1
ENEE606201	Rangkaian Elektronika Lanjut	Advanced Electronic Circuits	3
ENEE606202	Divais Fotonik	Photonic Devices	3
ENEE606203	Fabrikasi Divais Semikonduktor +P	Semiconductor Device Fabr + Lab	3
		Subtotal	**22**
Kode	**Semester 7**	**7th Semester**	
ENEE607030	Seminar	Seminar	2
ENEE607031	Rekayasa danKewirausahaan	Engineering Enterpreneurship	2
ENEE607032	Penulisan Ilmiah	Academic Writing	2
ENEE607204	Pengantar Nanoelektronik	Introduction of Nanoelectronics	3
ENEE607205	VLSI	VLSI	3
	Pilihan	Electives	4
		Subtotal	**16**
Kode	**Semester 8**	**8th Semester**	
ENEE608033	Skripsi	Bachelor Thesis	4
ENEE608207	Sel Surya	Solar Cell	3
ENEE608208	MEMS	MEMS	3
	Pilihan	Electives	4

		Subtotal	**14**

CURRICULUM STRUCTURE CONTROL ENGINEERING STREAM

KODE	MATA AJARAN	COURSE	SKS
	Semester 6	**6th Semester**	
ENEE606023	Kerja Praktik	Internship	2
ENEE606024	Pemodelan dan Simulasi	Modelling and Simulations	2
ENEE606025	Prakt. Teknik Telekomunikasi	Telecommunication Engineering Lab.	1
ENEE606026	Mikroprosesor dan Mikrokontroler	Microprocessor and Microcontroller	4
ENEE606027	Prakt.Mikroprosesor dan Mikrokontroler	Microprocessor & Microcontroller Lab.	1
ENEE606028	Pengukuran Besaran Listrik dan Elektronik	Electric and Electronic Measurements	2
ENEE606029	Praktikum Pengukuran Besaran Listrik	Electric Measurements Laboratory	1
ENEE606401	Sistem Kendali Digital	Digital Control System	3
ENEE606402	Sistem Kendali Proses	Process Control System	3
ENEE606403	Sistem Kendali Penggerak Elektrik	Electric Drive Control System	3
		Subtotal	**22**
Kode	**Semester 7**	**7th Semester**	
ENEE607030	Seminar	Seminar	2
ENEE607031	Rekayasa danKewirausahaan	Engineering Enterpreneurship	2
ENEE607032	Penulisan Ilmiah	Academic Writing	2
ENEE607404	Robotika	Robotics	3
ENEE607405	Sistem Kendali Prediktif & Adaptif	Adaptive & Predictive Control System	3
	Pilihan	Electives	4
		Subtotal	**16**
Kode	**Semester 8**	**8th Semester**	
ENEE608033	Skripsi	Bachelor Thesis	4
ENEE608407	Mekatronika	Mechatronics	3
ENEE608408	Sistem Berbasis Pengetahuan	Knowledge Based System	3
	Pilihan	Electives	4
		Subtotal	**14**

MATA KULIAH PILIHAN		
KODE	**MATA AJARAN**	**SKS**
ENEE607306	Topik Khusus Telekomunikasi 1	2
ENEE608309	Topik Khusus Telekomunikasi 2	2
ENEE607107	Topik Khusus Tenaga Listrik 1	2
ENEE608110	Topik Khusus Tenaga Listrik 2	2
ENEE607306	Topik Khusus Elektronika 1	2
ENEE608309	Topik Khusus Elektronika 2	2
ENEE607406	Topik Khusus Kendali 1	2

ENEE608409	Topik Khusus Kendali 2	2
ENEE607506	Topik Khusus Biomedik 1	2
ENEE608509	Topik Khusus Biomedik 2	2

CURRICULUM STRUCTURE BIOMEDICAL ENGINEERING STREAM

KODE	MATA AJARAN	COURSE	SKS
	Semester 6	**6th Semester**	
ENEE606023	Kerja Praktik	Internship	2
ENEE606024	Pemodelan dan Simulasi	Modelling and Simulations	2
ENEE606025	Prakt. Teknik Telekomunikasi	Telecommunication Engineering Lab.	1
ENEE606026	Mikroprosesor dan Mikrokontroler	Microprocessor and Microcontroller	4
ENEE606027	Prakt.Mikroprosesor dan Mikrokontroler	Microprocessor & Microcontroller Lab.	1
ENEE606028	Pengukuran Besaran Listrik dan Elektronik	Electric and Electronic Measurements	2
ENEE606029	Praktikum Pengukuran Besaran Listrik	Electric Measurements Laboratory	1
ENEE606501	Biologi dan Anatomi	Biology and Anatomy	3
ENEE606502	Sistem Komunikasi Medik	Medical Communication System	3
ENEE606503	Pengantar Teknologi Biomedik	Introduction to Biomedical Technologies	3
		Subtotal	**22**
Kode	**Semester 7**	**7th Semester**	
ENEE607030	Seminar	Seminar	2
ENEE607031	Rekayasa danKewirausahaan	Engineering Enterpreneurship	2
ENEE607032	Penulisan Ilmiah	Academic Writing	2
ENEE607504	Teknologi Pencitraan Medik	Medical Imaging Technology	3
ENEE607505	Pemodelan Sistem Medik	Medical System Modelling	3
	Pilihan	Elective	4
		Subtotal	**16**
Kode	**Semester 8**	**8th Semester**	
ENEE608033	Skripsi	Final Project	4
ENEE608507	Instrumentasi Biomedik + P	Biomedical Instrumentations + Lab	3
ENEE608508	Informatika Medik	Medical Informatics	3
	Pilihan	Elective	4
		Subtotal	**14**

FAST-TRACK CURRICULUM (S1 AND S2)

FAST TRACK CURRICULUM
TELECOMMUNICATION ENGINEERING STREAM

KODE	MATA AJARAN	COURSE	SKS
Kode	**Semester 7**	**7th Semester**	

ENEE607030	Seminar	Seminar	2
ENEE607031	Rekayasa dan Kewirausahaan	Rekayasa dan Kewirausahaan	2
ENEE607032	Penulisan Ilmiah	Academic Writing	2
ENEE603007	Matematika Terapan	Applied Mathematics	3
ENEE606303	Komunikasi Multimedia Pita Lebar	Broadband Multimedia Communications	3
ENET801002	Sistem Radar dan Disain	Radar Systems and Design	3
ENET801003	Pengolahan Sinyal dan Aplikasi	Digital Signal Processing & Apps	3
ENEE607304	Antena dan Propagasi	Antennas and Propagation	3
ENEE607305	Komunikasi Optik	Optical Communications	3
		Subtotal	**24**
Kode	**Semester 8**	**8th Semester**	
ENEE608033	Skripsi	Bachelor Thesis	4
ENEE802002	Metodologi Penelitian	Research Method	3
ENET802004	Teknik Sistem Medis Nirkabel	Wireless Medical System Eng.	3
ENET802005	Disain RF Lanjut	RF Engineering Design	3
ENET802006	Disain Antena Modern	Modern Antenna Design	3
ENMT803007	Komunikasi Multimedia Nirkabel	Multimedia Wireless Communications	3
ENEE608308	Divais Sistem Komunikasi	Communication System Devices	3
		Subtotal	**22**
Kode	**Semester 9**	**9th Semester**	
ENET803007	Tek. Komunikasi Gelombang Cahaya	Lightwave Communication Technology	3
ENET803008	Topik Khusus Telekomunikasi	Special Topic in Telecommunication	2
ENEE803003	Manaj. & Keekonomian Proyek Teknik	Engineering Economy & Project Manag.	3
		Subtotal	**8**
Kode	**Semester 10**	**10th Semester**	
ENEE804005	Publikasi Ilmiah	Publication	2
ENEE804004	Tesis	Thesis	8
		Subtotal	**10**

FAST TRACK CURRICULUM ELECTRONICS ENGINEERING STREAM

KODE	MATA AJARAN	COURSE	SKS
Kode	**Semester 7**	**7th Semester**	
ENEE607030	Seminar	Seminar	2
ENEE607031	Rekayasa dan Kewirausahaan	Rekayasa dan Kewirausahaan	2
ENEE607032	Penulisan Ilmiah	Academic Writing	2
ENEE801001	Matematika Terapan	Applied Mathematics	3
ENEF801001	Disain Rangkaian Terpadu	Integrated Circuit Design	3
ENEF801002	Nanoelektronika	Nanoelectronics	3
ENEF801003	Divais Fotonik Lanjut	Advanced Photonic Devices	3
ENEE606204	Pengantar Nanoelektronik	Introduction of Nanoelectronics	3
ENEE606205	VLSI	VLSI	3

		Subtotal	24
Kode	**Semester 8**	**8th Semester**	
ENEE608033	Skripsi	Bachelor Thesis	4
ENEF802004	Disain MEMS	MEMS Design	3
ENEF802005	Divais Solid State	Solid State Device	3
ENEF802006	Divais Hetero-struktur	Hetero-structure Devices	3
ENEE802002	Metodologi Penelitian	Research Method	3
ENEE606207	Sel Surya	Solar Cell	3
ENEE606208	MEMS	MEMS	3
		Subtotal	**22**
Kode	**Semester 9**	**9th Semester**	**SKS**
ENEE803003	Manaj. & Keekonomian Proyek Teknik	Engineering Economy & Project Manag.	3
ENEF803007	Sistem Optik Koheren	Optical Coherent System	2
ENEF803008	Sistem Pengukuran Metode Optik	Optical Method for Measurement	3
		Subtotal	**8**
Kode	**Semester 10**	**10th Semester**	**SKS**
ENEE804005	Publikasi Ilmiah	Publication	2
ENEE804004	Tesis	Thesis	8
		Subtotal	**10**

FAST TRACK CURRICULUM ELECTRICAL POWER ENGINEERING STREAM

KODE	MATA AJARAN	COURSE	SKS
Kode	**Semester 7**	**7th Semester**	
ENEE607030	Seminar	Seminar	2
ENEE607031	Rekayasa dan Kewirausahaan	Rekayasa dan Kewirausahaan	2
ENEE607032	Penulisan Ilmiah	Academic Writing	2
ENEE801001	Matematika Terapan	Applied Mathematics	3
ENEP801001	Operasi & Kendali Pembangkitan TL	Power Generation Ops & Control	3
ENEP801002	Mutu dan Kualitas Daya Sistem TL	Electrical Power System Quality	3
ENEP801003	Energi dan Lingkungan	Energi and Environment	3
ENEE607104	Sistem Tenaga Listrik danPrakti-kum	Electric Power System and Laboratory	3
ENEE607105	Teknik Tegangan & ArusTinggi +P	High Current & Voltage Eng + Lab	3
		Subtotal	**24**
Kode	**Semester 8**	**8th Semester**	
ENEE608033	Skripsi	Final Project	4
ENEE802002	Metodologi Penelitian	Research Method	3
ENEP802004	Sistem Dinamik dan Pemodelan	Dynamic System and Modeling	3
ENME802004	Manajemen & Ekonomi Energi	Economics Energy and Management	3
ENEP802006	Elektronika Daya Industri	Industrial Power Electronics	3

ENEE608108	Distribusi & Transmisi Tenaga Listrik	Electric Power Trans. & Distribution	3
ENEE608109	Proteksi Sistem Tenaga Listrik	Electric Power System Protection	3
		Subtotal	**22**
Kode	**Semester 9**	**9th Semester**	
ENEE803003	Manaj. & Keekonomian Proyek Teknik	Engineering Economy & Project Manag.	3
ENEP803007	Topsus Ketenagalistrikan & Energi	Topics in Power System and Energy	2
ENEP803008	Perencanaan Sistem Tenaga Listrik	Power System Planning	3
		Subtotal	**8**
Kode	**Semester 8**	**8th Semester**	
ENEE804005	Publikasi Ilmiah	Publication	2
ENEE804004	Tesis	Thesis	8
		Subtotal	**10**

FAST TRACK CURRICULUM CONTROL ENGINEERING STREAM

KODE	MATA AJARAN	COURSE	SKS
Kode	**Semester 7**	**7th Semester**	
ENEE607030	Seminar	Seminar	2
ENEE607031	Rekayasa dan Kewirausahaan	Rekayasa dan Kewirausahaan	2
ENEE607032	Penulisan Ilmiah	Academic Writing	2
ENEE801001	Matematika Terapan	Applied Mathematics	3
ENEC801001	Kendali Analog dan Dijital	Analog and Digital Control	3
ENEC801002	Topik Khusus Riset Terkini	Special Topic on Advance Research	3
ENEC801003	Pemodelan dan Rekayasa Sistem	Modeling and System Engineering	3
ENEE607404	Robotika	Robotics	3
ENEE607405	Sistem Kendali Prediktif & Adaptif	Adaptive & Predictive Control System	3
		Subtotal	**24**
Kode	**Semester 8**	**8th Semester**	
ENEE608033	Skripsi	Bachelor Thesis	4
ENEE802002	Metodologi Penelitian	Research Method	3
ENEC802004	Sistem Kendali Multivariabel	Multivariable Control Systems	3
ENEC802005	Robotika Cerdas	Intelligent Robotics	3
ENEC802006	Kendali Adaptif dan Optimal	Adaptive and Optimal Control	3
ENEE608407	Mekatronika	Mechatronics	3
ENEE608408	Sistem Berbasis Pengetahuan	Knowledge Based System	3
		Subtotal	**22**
Kode	**Semester 9**	**9th Semester**	
ENEC803007	Kendali dan Sistem Cerdas	Intelligent System and Control	3
ENEC803008	Kendali Lanjut Sistem Penggerak Elektrik	Advanced Control on Electric Drive System	2
ENEE803003	Manaj. & Keekonomian Proyek Teknik	Engineering Economy & Project Manag.	3

		Subtotal	**8**
Kode	**Semester 10**	**10th Semester**	
ENEE804005	Publikasi Ilmiah	Publication	2
ENEE804004	Tesis	Thesis	8
		Subtotal	**10**

CURRICULUM OF INTERNATIONAL PROGRAM ELECTRICAL ENGINEERING

KODE	Course	SKS
	1st Semester	
ENEE611001	Fund. of Digital Systems + Lab	3
ENEE611002	Academic Writing	2
ENGE610003	Calculus	4
ENGE610007	Physics (Electricity, MWO)	3
ENGE610008	Physics (Electricity, MWO) Lab	1
ENEE611003	**Intro to Electrical Engineering**	**2**
ENEE611004	Electric Materials	2
	Subtotal	**17**
	2nd Semester	
ENEE612005	Basic Computer and Laboratory	3
ENEE612006	Semiconductor Devices	2
ENGE610004	Linear Algebra	4
ENGE610005	Physics (Mechanics and Thermal)	3
ENGE610006	Physics (Mechanics and Thermal) Lab	1
ENEE612007	**Engineering Mathematics**	**4**
ENEE612008	Electric Circuit 1	3
	Subtotal	**20**
	3rd Semester	
ENEE613009	Electric Circuit 2	3
ENEE613010	Algorithm and Programming	4
ENEE613011	Vector Analysis Complex Variable	2
ENEE613012	Electric Circuit Laboratory	1
ENEE613013	Electrical Power Engineering	3
ENEE613014	**Electrical Power Engineering Laboratory**	**1**
ENEE613015	Telecommunication Engineering	3
ENEE613016	Telecommunication Engineering Lab.	1
ENEE613017	Probability and Stochastic Process	3
	Subtotal	**21**
	4th Semester	
ENEE614018	Control Engineering	3
ENEE614019	Control Engineering Laboratory	1
ENEE614020	**Electronics Circuits**	**3**
ENEE614021	Electronics Circuits Laboratory	1

ENEE614022	Electromagnetics	4
ENEE614023	Electric Measurements	2
ENEE614024	Electric Measurements Lab.	1
ENEE614025	Numerical Computation	2
ENEE614026	Signal and Systems	3
	Subtotal	**20**
	5th Semester	
ENEE615027	Microprocessor and Microcontroller	4
ENEE615028	**Microprocessor and Microcontroller Lab.**	**1**
UIGE610004	**Integrated Character Building B**	**6**
ENEE615029	Digital Control Systems	3
ENEE615030	Communication Networks	3
ENEE615031	Power Electronics and Laboratory	3
	Subtotal	**20**
	6th Semester	
ENEE616032	Internship	2
ENEE616033	Modelling and Simulation	2
UIGE600010 - UIGE600015	Religion	2
UIGE610001	Integrated Character Building A	6
ENEE616034	Introduction of Nanoelectronics	3
ENEE616035	Communication System Devices	3
	Subtotal	**18**
	7th Semester	
UIGE600020 - UIGE600048	Sports/Arts	1
ENGE610012	HSE Protection	2
ENEE617036	**Seminar**	**2**
ENEE617037	Engineering Enterpreneurship	2
ENEE617038	Electric Power System and Lab	3
ENEE617039	Process Control Systems	3
ENEE617040	Photonic Devices	3
NEW	Electives	2
	Subtotal	**18**
	8th Semester	
NEW	Electives	6
ENEE618041	Bachelor Thesis	4
	Subtotal	**10**
	Total	**144**

Electives:

ENEE617101 Object Oriented Programming + Lab 3
ENEE618102 Software Engineering 3

4.6. UNDERGRADUATE PROGRAM IN COMPUTER ENGINEERING

Program Specification

1.	**Awarding Institution**	Universitas Indonesia	
2.	**Teaching Institution**	Universitas Indonesia	
3.	**Programme Tittle**	Undergraduate Program in Computer Engineering	
4.	**Class**	Regular	
5.	**Final Award**	Sarjana Teknik (S.T)	
6.	**Accreditation / Recognition**	BAN-PT: B - accredited AUN-QA	
7.	**Language(s) of Instruction**	Bahasa Indonesia and English	
8.	**Study Scheme (Full Time / Part Time)**	Full Time	
9.	**Entry Requirements**	High school /equivalent AND pass the entrance exam.	
10.	**Study Duration**	Designed for 4 years	
	Type of Semester	Number of Semester	Number of weeks / semester
	Regular	8	17
	Short (optional)	3	8
11.	**Graduate Profiles:** Bachelor of Engineering who is able to design information network and computer based system systematically using standard method in accordance with professional ethics.		
12.	Expected Learning Outcomes: 1. Able to design system, component, and process based on needs in a variety of areas of life. 2. Able to design information networks. 3. Able to design a computer-based system. 4. Able to make algorithm and implement it into programming. 5. Able to apply the basic principles of mathematics, physics, and statistics in solving computer engineering. 6. Able to use the language both spoken and written in the Bahasa Indonesia and English for academic or non-academic activities. 7. Have integrity and are capable of critical thinking, creative, and innovative and have the intellectual curiosity to solve problems at the level of the individual and the group. 8. Able to utilize information technology communication. 9. Able to provide alternative solutions to problems that arise in the environment, society, nation, and country. 10. Able to identify varieties of entrepreneurial efforts that are characterized by innovation and self-reliance based on ethics.		

13	**Classification of Subjects**		
No.	**Classification**	**Credit Hours (SKS)**	**Percentage**
i	**University General Subjects**	**18**	**12.50%**
ii	**Basic Engineering Subjects**	**16**	**11,11%**
iii	**Basic Electrical Engineering Subject**	**17**	**11,80%**
iv	**Core subject**	**76**	**52,78%**
v	**Elective Subject**	**9**	**6,25%**
vi	**Special Subject (Internship, Seminar, Undergraduate Thesis)**	**8**	**5.56%**
	Total	**144**	**100 %**
14.	**Total Credit Hours to Graduate**		**144 SKS**

Career Prospects

The program graduates are needed in almost all fields of work, e.g. industry, services, banking and all fields requiring the application IT (Information technology).
Some professional profiles that are suited to this program's graduate are IT Manager, Project Manager, Program Manager, Programmer, System Analyst, Software Developer, Data Analyst, Product Specialist, Software Engineer, Computer Hardware Engineer, System Administrator, IT Support, etc.

CURRICULUM STRUCTURE COMPUTER ENGINEERING

KODE	MATA KULIAH	SUBJECT	SKS
	Semester 1	**1st Semester**	
UIGE600002	MPKT B	Integrated Character Building B	6
ENGE600007	Fisika Listrik, MGO	Physics (Electricity, MWO)	3
ENGE600008	Prak. Fisika Listrik, MGO	Physics (Electricity, MWO) Lab	1
ENGE600003	Kalkulus	Calculus	4
ENCE601001	Dasar Sistem Digital + P	Fund. of Digital System + Lab	3
UIGE600003	Bahasa Inggris	English	3
		Sub Total	**20**
	Semester 2	**2nd Semester**	
UIGE600001	**MPKT A**	**Integrated Character Building A**	**6**
UIGE600010 - UIGE600015	Agama	Religion	2
UIGE600020 - UIGE600048	Olah Raga/Seni	Sports/Arts	1
ENGE600002	Aljabar Linier	Linear Algebra	4
ENGE600005	Fisika Mekanika dan Panas	Physics (Mechanics and Thermal)	3
ENGE600006	Prak. Fisika Mekanika dan Panas	Physics (Mechanics and Thermal) Lab	1
ENCE602002	Pengantar Teknik Komputer + P	Intro to Computer Engineering + Lab	3
		Sub Total	**20**
	Semester 3	3rd Semester	
ENCE603003	Matematika Teknik	Engineering Mathematics	4
ENCE603004	Dasar Rangkaian Elektronika	Basics of Electronic Circuits	2
ENCE603005	Rangkaian Listrik	Electric Circuit	2
ENCE603006	Prakt Rangkaian Listrik & Elektronik	Electric & Electronic Circuits Lab	1
ENCE603008	Organisasi dan Arsitektur Komputer	Computer Organization & Architecture	3
ENCE603009	Struktur Diskrit	Discrete Structures	3
ENCE603010	Analisis Vektor dan Peubah Kompleks	Vector Analysis Complex Variables	2
ENCE603012	Pemrograman Lanjut	Advanced Programming	3
		Sub Total	**20**
	Semester 4	**4th Semester**	
ENCE604011	Sinyal dan Sistem	Signal and Systems	3
ENCE604013	Perancangan Sistem Digital + P	Digital System Design + Lab	3
ENCE604014	Sistem Berbasis Komputer	Computer Based Systems	4

ENCE604015	Praktikum Sistem Berbasis Komputer	Computer Based Systems Laboratory	1
ENCE604016	Jaringan Komputer dan Praktikum	Computer Networks and Laboratory	4
ENCE603007	Algoritma	Algorithm	3
		Sub Total	**18**
	Semester 5	**5th Semester**	
ENCE605017	Probabilitas dan Proses Stokastik	Probability and Stochastic Process	3
ENCE605018	Rekayasa Perangkat Lunak	Software Engineering	3
ENCE605019	Sistem Embedded 1	Embedded System 1	2
ENCE605020	Sistem Operasi	Operating Systems	3
ENCE605021	Desain & Manajemen Jaringan Komputer + P	Design & Management Computer Networks + Lab	4
ENCE605022	Sistem Basis Data dan Praktikum	Database Systems and Laboratory	3
		Sub Total	**18**
	Semester 6	**6th Semester**	
ENCE607031	Penulisan Ilmiah	Academic Writing	2
ENCE606024	Jaringan Telekomunikasi	Telecommunication Networks	3
ENCE606025	Keamanan Jaringan Komputer + P	Computer Networks Security + Lab	3
ENCE606026	Sistem Embedded 2 + Lab	Embedded Systems 2 + Lab	3
ENCE606027	Profesionalisme & Etika dalam TI	Professionalism and Ethics in IT	2
ENCE606028	Pemrograman Berorientasi Objek + P	Object Oriented Programming + Lab	3
ENCE606029	Teknologi Nirkabel	Wireless Technology	2
		Sub Total	**18**
	Semester 7	**7th Semester**	
ENCE607030	Seminar	Seminar	2
ENCE606023	Kerja Praktik	Internship	2
ENCE607032	Kewirausahaan dalam Teknologi Informasi	Entrepreneurship in Information Technology	2
ENCE607033	Kapita Selekta Teknik Komputer	Capita Selecta in Computer Engineering	2
ENCE607034	Praktikum Jaringan Telekomunikasi	Telecommunication Networks Lab	1
ENCE607035	Interaksi Manusia dan Komputer	Human Computer Interaction	2
	Pilihan	Electives	6
		Sub Total	**17**
	Semester 8	**8th Semester**	
ENCE608036	Skripsi	Bachelor Thesis	4
ENCE608037	Manajemen Proyek Teknologi Informasi	Project Management in IT	3
ENCE608038	Pemrosesan Sinyal Multimedia	Multimedia Signal Processing	3
	Pilihan	Electives	3
		Sub Total	**13**
		Total	**144**

ELECTIVES COMPUTER ENGINEERING

KODE	MATA KULIAH	SUBJECT	SKS
	Semester Ganjil	Odd Semester	
ENCE607101	Dasar Regulasi dan Kebijakan Publik TIK	Regulation & Public Policy on ICT Sector	3
ENCE607102	Rekayasa dan Analisis Data	Data Analysis Engineering	3
	Semester Genap	Even Semester	
ENCE608103	Perancangan VLSI	VLSI Design	2
ENCE608104	Teknologi Big Data	Big Data Technology	3

4.7. UNDERGRADUATE PROGRAM IN METALLURGY & MATERIALS ENGINEERING

Program Specification

1	**Awarding Institution**		Universitas Indonesia Double degree : Universitas Indonesia & partner universities
2	**Teaching Institution**		Universitas Indonesia Double degree : Universitas Indonesia & partner universities
3	**Programme Title**		Undergraduate Program in Metallurgy and Materials Engineering
4	**Class**		Regular, Parallel, International
5	**Final Award**		Sarjana Teknik (S.T) Double Degree : Sarjana Teknik (S.T) and Bachelor of Engineering (B.Eng)
6	**Accreditation / Recognition**		BAN-PT : "A" Grade AUN-QA : Accredited
7	**Language(s) of Instruction**		Bahasa Indonesia and English
8	**Study Scheme (Full Time / Part Time)**		Full Time
9	**Entry Requirements**		High school graduate/equivalent, or Vocational/ Polytechnics graduate
10	**Study Duration**		Programmed for 4 Years
	Type of Semester	Number of semester	Number of weeks /semester
	Regular	8	17
	Short (optional)	3	8
11	**Graduate Profiles:** Undergraduate is able to design environmental friendly in metallurgy and material process, analyzing material degradation, and are capable of playing active and dynamic role with professional ethic in national, regional and international communities		
12	**Expected Learning Outcomes :** 1. Able to implement the knowledge of mathematic and science in problems of metallurgy and materials technology process 2. Able to implement the principle of mineral extraction and processing from the ore preparation to semi-finished product 3. Able to select the material based on design, engineering and standards 4. Able to decide the proper manufacturing process to produce high quality product 5. Able to implement corrosion and material degradation principle as well the corrective action and prevention 6. Able to design analysis procedures for material failure. 7. Able to analyze the data from the experiment. 8. Able to use skill, technique and modern tools needed in engineering practice. 9. Able to implement environment management principle also health and safety environment. 10. Able to implement general management principle and quality assurance in industrial environment. 11. Able to participate in multidisciplinary team 12. Able to learn independently and sustainably (long life learning). 13. Able to think in critical, creative, innovative and have the intellectual capability to solve problems individually or in groups.		

12	14. Able to identify various attempts in entrepreneurship which characterized by innovation and self-reliance based on ethics. 15. Able to use both good bahasa Indonesia and English language in the form of oral and written for the academic and non academic purposes. 16. Able to provide alternative solution to the various problem that arise in the communities, nation and country. 17. Able to take advantage in Information Communication Technology.		
13	**Classification of Subjects**		
No	Classification	Credit Hours (SKS)	Percentage
i	Basic University Courses	20	14 %
ii	Basic Engineering Courses	22	15 %
iii	Compulsory Courses	85	59 %
iv	Elective Courses	10	7 %
v	Internship, Seminar, Skripsi, Projects	7	5 %
	Total	144	100 %
14	**Total Credit to Graduate**		**144 SKS**

Employment Prospects

Bachelor of Metallurgy and Materials Engineering graduates can work in various sectors, both private and government, like industry, automotive, manufacturing, heavy equipment, mining, material consultant, oil and gas, research and development institutions, academia, and others both within and abroad.

COURSE STRUCTURE UNDERGRADUATE PROGRAM METALLURGY AND MATERIALS ENGINEERING

KODE	MATA AJARAN	SUBJECT	SKS
	Semester 1	**1st Semester**	
UIGE 6 0 0002	MPKT B	Integrated Character Building Subject B	6
UIGE 6 0 0003	Bahasa Inggris	English	3
ENGE 6 0 0001	Kalkulus 1	Calculus 1	3
ENGE 6 0 0009	Kimia Dasar	Basic Chemistry	2
ENMT 6 0 1 001	Menggambar Teknik	Engineering Drawing	2
ENMT 6 0 1 002	Pengantar Material Teknik	Introduction to Engineering Materials	2
ENMT 6 0 1 003	Praktikum Kimia Dasar	Basic Chemistry Laboratory	1
		Sub Total	**19**
	Semester 2	**2nd Semester**	
UIGE 6 0 0001	MPKT A	Integrated Character Building Subject A	6
UIGE 6 0 00010-15	Agama	Religious Studies	2
UIGE 6 0 00020-48	Olah Raga / Seni	Sport & Art	1
ENGE 6 0 0004	Aljabar Linier	Linear Algebra	4
ENGE 6 0 0002	Kalkulus 2	Calculus 2	3
ENGE 6 0 0005	Fisika Mekanika dan Panas	Physics (Mechanic & Heat)	3
ENGE 6 0 0006	Praktikum Fisika Mekanika dan Panas	Physics (Mechanic & Heat) Laboratory	1
		Sub Total	**20**
	Semester 3	3rd Semester	
ENGE 6 0 0007	Fisika Listrik, Magnet, Gelombang dan Optik	Physics (Electric, Magnet, Wave & Optic)	3
ENGE 6 0 0008	Praktikum Fisika Listrik, Magnet, Gelombang dan Optik	Physics (Electric, Magnet, Wave & Optic) Laboratory	1
ENGE 6 0 0010	Statistik & Probabilitas	Statistics & Probability	2
ENMT 6 0 3 004	Elektro Kimia	Electro-Chemistry	3
ENMT 6 0 3 005	Karakterisasi Kimia Material	Chemical Characterization of Materials	2
ENMT 6 0 3 006	Metalurgi Fisik 1	Physical Metallurgy 1	4
ENMT 6 0 3 007	Statika & Mekanika Material	Static & Mechanic of Materials	3
ENMT 6 0 3 008	Termodinamika Material	Thermodynamics of Materials	3
		Sub Total	**21**
	Semester 4	4th Semester	
ENMT 6 0 4 009	Analisis Struktur Material	Tech. of Microstructural Analysis	2
ENMT 6 0 4 010	Kimia Polimer	Polymer Chemistry	4
ENMT 6 0 4 011	Komputasi Numerik	Numerical Computation	2
ENMT 6 0 4 012	Metalurgi Fisik 2	Physical Metallurgy 2	3
ENMT 6 0 4 013	Pengolahan Mineral	Mineral Processing	4

ENMT 6 0 4 014	Pengujian Material	Testing of Materials	2
ENMT 6 0 4 015	Peristiwa Perpindahan	Transport Phenomenon	3
ENMT 6 0 4 016	Praktikum Karakterisasi Kimia Material	Chemical Characterization of Materials Laboratory	1
		Sub Total	**21**
	Semester 5	5th Semester	
ENGE 6 0 0012	K3LL	Health, Safety & Environment	2
ENMT 6 0 5 017	Manajemen Industri	Industrial Management	2
ENMT 6 0 5 018	Metalurgi Ekstraksi Non Ferrous	Non Ferrous Extractive Metallurgy	3
ENMT 6 0 5 019	Perlakuan Panas & Rek. Permukaan	Heat Treatment & Surface Engineering	3
ENMT 6 0 5 020	Proses Manufaktur Logam	Metal Manufacturing Process	4
ENMT 6 0 5 021	Teknologi Polimer	Polymer Technology	3
ENMT 6 0 5 022	Praktikum Analisis Struktur Material	Tech. of Microstructural Analysis Laboratory	1
ENMT 6 0 5 023	Praktikum Pengujian Material	Testing of Materials Laboratory	1
		Sub Total	**19**
	Semester 6	**6th Semester**	
ENMT 6 0 6 024	Korosi & Proteksi Logam	Corrosion & Protection of Metals	3
ENMT 6 0 6 025	Penyambungan Material	Materials Joining	3
ENMT 6 0 6 026	Proses Pembuatan Besi Baja	Iron & Steel Making Process	2
ENMT 6 0 6 027	Teknologi Keramik	Ceramic Technology	3
ENMT 6 0 6 028	Teknologi Komposit	Composite Technology	3
ENMT 6 0 6 029	Praktikum Korosi & Proteksi Logam	Corrosion & Protection of Metals Laboratory	1
ENMT 6 0 6 030	Praktikum Metalurgi Ekstraksi	Extractive Metallurgy Laboratory	1
ENMT 6 0 6 031	Praktikum Proses Manufaktur Logam	Metal Manufacturing Process Laboratory	2
		Sub Total	**18**
	Semester 7	**7th Semester**	
ENMT 6 0 7 032	Disain Rekayasa Produk	Engineering Design of Products	3
ENMT 6 0 7 033	Kapita Selekta	Capita Selecta	2
ENMT 6 0 7 034	Mekanika Perpatahan & Analisis Kegagalan	Fracture Mechanics & Failure Analysis	4
ENMT 6 0 0 035	Kerja Praktek	Internship	2
ENMT 6 0 0 036	Seminar	Seminar of Final Project Proposal	1
	Pilihan 1	Elective 1	2
	Pilihan 2	Elective 2	2
		Sub Total	**16**
	Semester 8	8th Semester	
ENMT 6 0 0 037	Skripsi	Final Project	4
	Pilihan 3	Elective 3	2
	Pilihan 4	Elective 4	2
	Pilihan 5	Elective 5	2
		Sub Total	**10**
		TOTAL	**144**

ELECTIVES

KODE	MATA AJAR	SUBJECT	SKS
ENMT 6 0 7 938	Aditif Polimer	Polymer Additives	2
ENMT 6 0 7 939	Baja Khusus & Paduan Super	Special Steels & Super Alloys	2
ENMT 6 0 7 940	Bio Material	Bio Material	2
ENMT 6 0 7 941	Desain Pabrik Metalurgi	Metallurgical Plant Design	2
ENMT 6 0 7 942	Korosi Temperatur Tinggi	High Temperature Corrosion	2
ENMT 6 0 7 943	Material Elektronik	Electronic Materials	2
ENMT 6 0 7 944	Metodologi Penelitian	Research Methodology	2
ENMT 6 0 7 945	Pemrosesan Plastik	Plastic Processing	2
ENMT 6 0 7 946	Refraktori Material	Refractory Materials	2
ENMT 6 0 7 947	Sistem Manajemen Mutu	Quality Management Systems	2
ENMT 6 0 8 948	Analisis Pembentukan Logam	Analysis of Deformation	2
ENMT 6 0 8 949	Ekologi Industri	Industrial Ecology	2
ENMT 6 0 8 950	Korosi Pada Beton	Concrete Corrosion	2
ENMT 6 0 8 951	Material Energi	Energy Materials	2
ENMT 6 0 8 952	Metalurgi Ekstraksi Lanjut	Advanced Extractive Metallurgy	2
ENMT 6 0 8 953	Peralatan Mekanika Industri	Industrial Mechanic Equipment	2
ENMT 6 0 8 954	Rekayasa Permukaan Material Lanjut	Advanced Surface Engineering	2
ENMT 6 0 8 955	Standardisasi Material	Material Standardization	2
ENMT 6 0 8 956	Teknologi Daur Ulang Polimer	Polymer Recycling Technology	2
ENMT 6 0 8 957	Teknologi Karet	Rubber Technology	2
ENMT 6 0 8 958	Teknologi Nano	Nano Technology	2

COURSE STRUCTURE INTERNATIONAL UNDERGRADUATE METALLURGY & MATERIALS ENGINEERING

KODE	SUBJECT	SKS
	1st Semester	
ENGE 6 1 0001	Calculus 1	3
UIGE 6 1 0002	Academic Writing	3
ENGE 6 1 0005	Physics (Mechanic & Heat)	3
ENGE 6 1 0006	Physics (Mechanic & Heat) Laboratory	1
ENGE 6 1 0009	Basic Chemistry	2
ENMT 6 1 1 001	Engineering Drawing	2
ENMT 6 1 1 002	Introduction to Engineering Materials	2
ENMT 6 1 1 003	Thermodynamics of Materials	3
ENMT 6 1 1 004	Basic Chemistry Laboratory	1
	Sub Total	**20**
	2nd Semester	
ENGE 6 1 0004	Linear Algebra	4

ENGE 6 1 0002	Calculus 2	3
ENGE 6 1 0007	Physics (Electric, Magnet, Wave & Optic)	3
ENGE 6 1 0008	Physics (Electric, Magnet, Wave & Optic) Laboratory	1
ENGE 6 1 0010	Statistics & Probability	2
ENMT 6 1 2 005	Polymer Chemistry	4
ENMT 6 1 2 006	Transport Phenomenon	3
	Sub Total	**20**
	3rd Semester	
ENGE 6 1 0012	Health, Safety & Environment	2
ENMT 6 1 3 007	Chemical Characterization of Materials	2
ENMT 6 1 3 008	Electro-Chemistry	3
ENMT 6 1 3 009	Heat Treatment & Surface Engineering	3
ENMT 6 1 3 010	Physical Metallurgy 1	4
ENMT 6 1 3 011	Polymer Technology	3
ENMT 6 1 3 012	Static & Mechanic of Materials	3
	Sub Total	**20**
	4th Semester	
ENMT 6 1 4 013	Corrosion & Protection of Metals	3
ENMT 6 1 4 014	Iron & Steel Making Process	2
ENMT 6 1 4 015	Mineral Processing	4
ENMT 6 1 4 016	Numerical Computation	2
ENMT 6 1 4 017	Physical Metallurgy 2	3
ENMT 6 1 4 018	Tech. of Microstructural Analysis	2
ENMT 6 1 4 019	Testing of Materials	2
ENMT 6 1 4 020	Chemical Characterization of Materials Laboratory	1
ENMT 6 1 4 021	**Corrosion & Protection of Metals Laboratory**	**1**
	Sub Total	**20**
	5th Semester	
UIGE 6 1 0004	Integrated Character Building Subject B	6
ENMT 6 1 5 022	Industrial Management	2
ENMT 6 1 5 023	Metal Manufacturing Process	4
ENMT 6 1 5 024	Non Ferrous Extractive Metallurgy	3
ENMT 6 1 5 025	Tech. of Microstructural Analysis Laboratory	1
ENMT 6 1 5 026	Testing of Materials Laboratory	1
	Sub Total	**17**
	6th Semester	
UIGE 6 1 0001	Integrated Character Building Subject A	6
UIGE 6 1 0005-9	Religious Studies	2
UIGE 6 1 0003	Sport & Art	1
ENMT 6 1 6 027	Ceramic Technology	3
ENMT 6 1 6 028	Composite Technology	3
ENMT 6 1 6 029	Materials Joining	3
ENMT 6 1 6 030	Extractive Metallurgy Laboratory	1
ENMT 6 1 6 031	Metal Manufacturing Process Laboratory	2

	Sub Total	**21**
	7th Semester	
ENMT 6 1 7 032	Capita Selecta	2
ENMT 6 1 7 033	Engineering Design of Products	3
ENMT 6 1 7 034	Fracture Mechanics & Failure Analysis	4
ENMT 6 1 0 035	Internship	2
ENMT 6 1 0 036	Seminar of Final Project Proposal	1
	Elective 1	2
	Elective 2	2
	Sub Total	**16**
	8th Semester	
ENMT 6 1 0 037	Final Project	4
	Elective 3	2
	Elective 4	2
	Elective 5	2
	Sub Total	**10**
	TOTAL	**144**

4.8. UNDERGRADUATE PROGRAM IN ARCHITECTURE

Program Specification

1	**Awarding Institution**		Universitas Indonesia, for Double Degree Program : Universtas Indonesia and partner university
2	**Teaching Institution**		Universitas Indonesia Double Degree: Universitas Indonesia and Partner Universities
3	**Program**		Undergraduate Program in Architecture
4	**Class**		Regular, Parallel, International
5	**Degree Offered**		Sarjana Arsitektur (S.Ars) for Double Degree: Sarjana Arsitektur (S.Ars) and Bachelor of Architecture (B.Arch)
6	**Accreditation / Recognition**		A Accredited from BAN-PT AUN-QA
7	**Language of Instruction**		Bahasa Indonesia and English
8	**Study Scheme (Full time/Part time)**		Full time
9	**Entry requirement**		SMA Graduate/equal or D3/Polytechnic graduate
10	**Duration of Study**		4 years / program
	Semester	Total of semester	Weeks / Semester
	Regular	8	16-17
	Short (optional)	3	8
11	**Graduates Profile:** Sarjana Arsitektur is a graduate who has the ability to design architecture with respect to context and local needs and is based on the application of basic knowledge of architecture. Graduates are expected to have the ability as: • **An Initiator**- able to provide solutions to spatial problems critically and creatively with respect to local context and needs • **A Designer** - have the skill in assembling architectural elements and materials, have an understanding of built aspects, and have a sensibility in creating meaningful architectural design. • **A Communicator** – able to communicate ideas through words, writings, drawings, modeling and other media. • **A Collaborator** - able to work together with various stakeholders to propose creative solutions for real problems		

12	**Learning Outcome** 1. Able to create architectural design by integrating basic architectural knowledge, applying design and communication skills, applying ability for imagination, creative thinking, innovation and three-dimensional thinking. 2. Able to synthesize the knowledge of architectural history and theories, including knowledge on art, culture, and humanities that could influence the quality of architectural design. 3. Able to analyze context in which architecture is designed and integrate it through design that responds appropriately to the context. 4. Able to analyze the needs and characteristics of the users and integrate them as the basis to define contextual and functional requirements for different types of built environment. 5. Able to construct the knowledge of architectural design methods. 6. Able to construct the knowledge of structural systems, building materials and construction, and building utility. 7. Able to integrate the knowledge of natural and environmental systems into a sustainable architectural design. 8. Aware of various roles of architects in the society. 9. Able to gather information, formulate problems, perform analysis and synthesis that are related to architecture. 10. Able to apply mathematics, science, and basic engineering into the solution of complex technical problems. 11. Have integrity, able to demonstrate critical, creative, and innovative thinking, and have intellectual curiosity in solving the problems both at individual and group levels. 12. Able to offer alternative solutions towards various problems in the society, the community, and the nation. 13. Able to utilize information and communication technology. 14. Able to use verbal and written language in Bahasa Indonesia and English fluently in academic and non-academic activities. 15. Able to identify various innovative and independent entrepreneurial endeavors with respect to ethics.

13	**Course Composition**		
No	Type of Course	Credits	Percentage
i	University General Subjects	18	12,5%
ii	Basic Engineering Subjects	11	7,6%
iii	Architecture Core Subjects	87	60,4%
iv	Electives	28	19,5%
v	Total	144	100%
14	**Total credits for graduation**		**144 Credit Semester Units**

Job Opprtunity

Graduates of Strata-1 Architecture Program UI hold a Sarjana Arsitektur with pre-professional qualifications. The graduate will be able/can may work as an intern in a professional practice or to continue on to a Professional Architectural Education Program (PPARS) (Architect). To obtain professional certification, a graduate has to perform an internship and pass the qualification assessment by the professional association (IAI/Indonesian Institute of Architects).

A graduate holding a Sarjana Arsitektur UI can work in various fields of the construction industry such as architecture, interior design or construction supervision. In addition to pursuing a career in the architectural field, graduates are able to develop a career as an assessor for project feasibility studies, building and environmental management, to work in the building materials industries as well as working in the public sector related to government buildings, construction and the built environment. In addition to these areas, graduates can also work in various fields of work that employ creative abilities and critical thinking skills.

CURRICULUM STRUCTURE ARCHITECTURE

KODE	MATA AJARAN	SUBJECT	CREDIT
CODE	**Semester 1**	**1st Semester**	
UIGE600002	MPK Terintegrasi B (Sains, Teknologi, Kesehatan)	Integrated Character Building B (Science, Technology, Health)	6
UIGE600003	Bahasa Inggris	English	3
ENGE600001	Kalkulus 1	Calculus 1	3
ENAR601001	Pengantar Arsitektur	Introduction to Architecture	3
ENAR601009	Desain Dasar 1	Basic Design 1	5
		Sub Total	**20**
	Semester 2	**2nd Semester**	
UIGE600001	MPK Terintegrasi A (Sosial-Humaniora)	Integrated Character Building A (Social-Humanities)	6
	Olah Raga/Seni	Sport/Arts	1
	Agama	Religion	3
ENGE600004	Aljabar Linear	Linear Algebra	4
ENAR602002	Desain Dasar 2	Basic Design 2	7
		Sub Total	**20**
	Semester 3	**3rd Semester**	
ENGE600005	Fisika Mekanika dan Panas	Mechanics and Thermal Physics	**3**
ENGE600006	Praktikum Fisika Mekanika dan Panas	Mechanics and Thermal Physics Laboratory	1
ENAR603003	Perancangan Arsitektur 1	Architectural Design 1	7
ENAR603010	Sejarah dan Teori Arsitektur 1	History and Theory of Architecture 1	3
ENAR603011	Metode Perancangan	Design Methods	3
ENAR603012	Teknologi Bangunan 1	Building Technology 1	3
		Sub Total	**20**
	Semester 4	**4th Semester**	
ENAR604004	Perancangan Arsitektur 2	Architectural Design 2	8
ENAR604013	Sejarah dan Teori Arsitektur 2	History and Theory of Architecture 2	3
ENAR604014	Teknologi Bangunan 2	Building Technology 2	3
ENAR604015	Media Desain Digital	Digital Design Media	3
	Pilihan	Elective	3
		Sub Total	**20**
	Semester 5	**5th Semester**	
ENAR605005	Perancangan Arsitektur 3	Architectural Design 3	9
ENAR605016	Teknologi Bangunan 3	Building Technology 3	3
	Pilihan	Elective	3
	Pilihan	Elective	3
		Sub Total	**18**
ENAR606006	Perancangan Arsitektur 4	Architectural Design 4	9
ENAR606017	Pengantar Konteks Perkotaan	Introduction to Urban Context	3
	Pilihan	Elective	3
	Pilihan	Elective	3
		Sub Total	**18**
	Semester 7	**7th Semester**	

ENAR607007	Perancangan Arsitektur 5	Architectural Design 5	9
	Pilihan	Elective	3
	Pilihan*)	Elective*)	2
		Sub Total	**14**
	Semester 8	**8th Semester**	
ENAR600008	Skripsi/Tugas Akhir	Undergraduate Thesis/Final Project	6
	Pilihan	Elective	3
	Pilihan**)	Elective**)	3
	Pilihan*)	Elective*)	2
		Sub Total	**14**
		Total	**144**

ELECTIVES

Kode	Mata Kuliah	Elective Course	Credit
ENAR600018	Akustik	Acoustics	3
ENAR600019	Arsitektur di Kawasan Pesisir	Coastal Architecture	3
ENAR600020	Arsitektur Etnik	Ethnic Architecture	3
ENAR600021	Arsitektur, Kota, dan Kuasa	Architecture, City, and Power	3
ENAR600022	Arsitektur Pusaka	Heritage Architecture	3
ENAR600023	Ekologi Perkotaan	Urban Ecology	3
ENAR600024	Fabrikasi Digital	Digital Fabrication	3
ENAR600025	Fasad Bangunan Tinggi	High-Rise Building Façades	3
ENAR600026	Fotografi	Photography	3
ENAR600027	Geometri dan Arsitektur	Geometry and Architecture	3
ENAR600028	Keseharian dan Arsitektur	Everyday and Architecture	3
ENAR600029	Komunikasi Desain Digital 2D	2D Digital Design Communication	3
ENAR600030	Komunikasi Desain Digital 3D	3D Digital Design Communication	3
ENAR600031	Lingkungan Daur Hidup	Lifecycle Environment	3
ENAR600032	Manajemen Proyek Lanjut	Project Management	3
ENAR600033	Prinsip-prinsip Perancangan Kota	Urban Design Principles	3
ENAR600034	Perancangan Ruang Dalam	Interior Design	3
ENAR600035	Perancangan Ruang Luar	Site Planning and Design	3
ENAR600036	Perencanaan Kota	City Planning	3
ENAR600037	Psikologi Arsitektur	Architectural Psychology	3
ENAR600038	Real Estate	Real Estate	3
ENAR600039	Studi Kelayakan Proyek	Project Feasibility Study	3
ENAR600040	Tata Cahaya	Lighting Design	3
ENAR600041	Teori dan Metode Perancangan Lingkungan	Environmental Design Theories and Methods	3
ENAR600042	Teori Perumahan Kota	Urban Housing Theory	3
ENAR600043	Utilitas Bangunan	Building Utility	3
ENAR600044	Workshop Tektonik	Tectonic Workshop	3
ENAR600045	Kajian Mandiri	Independent Study	3
ENAR600046	Kajian Perancangan**)	Design Study**)	3

ENAR600047	Kapita Selekta	Capita Selecta	3
ENAR600048	Kerja Praktek/ KKN	Internship Program	3
ENAR600049	Topik Khusus Perancangan Arsitektur	Special Topic on Architectural Design	3
ENAR600050	Topik Khusus Perancangan Perkotaan	Special Topic on Urban Design	3
ENAR600051	Topik Khusus Perumahan dan Permukiman Perkotaan	Special Topic on Urban Housing and Settlement	3
ENAR600052	Topik Khusus Sejarah, Teori dan Kritik Arsitektur	Special Topic on Architectural History, Theory and Criticism	3
ENAR600053	Topik Khusus Teknologi Bangunan	Special Topic on Building Technology	3

CURRICULUM STRUCTURE OF UNDERGRADUATE PROGRAM IN ARCHITECTURE INTERNATIONAL CLASS

KODE	SUBJECT	CREDIT
CODE	**1st Semester**	
UIGE610002	Academic Writing	3
ENGE610001	Calculus 1	3
ENGE610004	Mechanics and Thermal Physics	3
ENGE610005	Mechanics and Thermal Physics Laboratory	1
ENAR611009	Introduction to Architecture	3
ENAR611001	Basic Design 1	5
	Sub Total	**18**
	2nd Semester	
ENGE610004	Linear Algebra	4
ENAR612002	Basic Design 2	7
ENAR612015	Digital Design Media	3
	Elective	3
	Sub Total	**17**
	3rd Semester	
ENAR613003	Architectural Design 1	7
ENAR613010	History and Theory of Architecture 1	3
ENAR613011	Design Methods	3
ENAR613012	Building Technology 1	3
	Elective	3
	Sub Total	**17**
	4th Semester	
ENAR614004	Architectural Design 2	8
ENAR614013	History and Theory of Architecture 2	3
ENAR614014	Building Technology 2	3
ENAR614015	Elective	3
	Elective	3
	Sub Total	**20**
	5th Semester	
ENAR615005	Architectural Design 3	9
ENAR615016	Building Technology 3	3

has

UIGE610004	Integrated Character Building (Social-Humanities)	6
	Sub Total	**18**
	6th Semester	
ENAR616006	Architectural Design 4	9
ENAR616017	Introduction to Urban Context	3
UIGE610001	Integrated Character Building (Science, Technology, Health)	6
	Religion	2
	Sub Total	**20**
	7th Semester	
ENAR617007	Architectural Design 5	9
	Elective	3
	Elective	3
	Elective *)	2
	Sub Total	**17**
	8th Semester	
ENAR610008	Undergraduate Thesis/Final Project	6
	Sports/Arts	1
	Elective	3
	Elective **)	3
	Elective *)	2
	Sub Total	**15**
	Total	**144**

ELECTIVE COURSES

Kode	Elective Course Subject	Credit
ENAR610018	Acoustics	3
ENAR610020	Ethnic Architecture	3
ENAR610022	Heritage Architecture	3
ENAR610054	Introducing Sustainability	3
ENAR610031	Life Cycle Environment	3
ENAR610040	Lighting Design	3
ENAR610026	Photography	3
ENAR610038	Real Estate	3
ENAR610035	Site Planning and Design	3
ENAR610029	2D Digital Design Communication	3
ENAR610030	3D Digital Design Communication	3
ENAR610045	Independent Study	3
ENAR610046	Design Study**)	3
ENAR610047	Capita Selecta	3
ENAR610048	Internship	3
ENAR610049	Special Topic on Architectural Design	3
ENAR610050	Special Topic on Urban Design	3
ENAR610051	Special Topic on Urban Housing and Settlement	3
ENAR610052	Special Topic on Architectural History, Theory and Criticism	3

ENAR610053	Special Topic on Building Technology	3

*) Students are required to take minimum 2 subjects from outside Architecture Study Program as electives
**) Design Study is required as elective for students who choose to take Final Project
Courses taken during study abroad /exchange program can be transferred to fulfill the 144 Credit Semester Units requirement (upon approval of Credit Transfer Committee).

COURSE STRUCTURE AT CURTIN UNIVERSITY

Code	Course Title	Credits
	Year 3-Semester 5 (July)	
COMS1010	Academic and Professional Communications	25
ARCH2022	Architectural Contexts Studio	25
ARCH2023	Architectural Contexts Methods	25
ARCH2004	Architecture and Identity	25
	Sub Total	**100**
	Year 3-Semester 6 (February)	
ARCH3026	Architectural Discourse and Spatial Intelligence Studio	25
ARCH3027	Architectural Discourse and Spatial Intelligence Methods	25
ARCH3008	Urban Contexts	25
ARCH3006	Environmental and Technological Systems in Architecture 1	25
	Sub Total	**100**
	Year 4-Semester 7 (July)	
ARCH3024	Architectural Design and Technical Integration Studio	25
ARCH3025	Architectural Design and Technical Integration Methods	25
ARCH3007	Environmental and Technological Systems in Architecture 2	25
ARCH3009	Architecture, Theory and Critique	25
	Sub Total	**100**
	Total Credits taken at Curtin University	**300**

COURSE STRUCTURE AT QUEENSLAND UNIVERSITY OF TECHNOLOGY (QUT)

February Entry		July Entry	
Code	**Course Title**	**Code**	**Course Title**
	Semester 5 (February)		**Semester 5 (July)**
DAB511	Architectural Design 5	DAB611	Architectural Design 6
DAH530	Integrated Technologies 2	DAH635	Architectural Technology 2
DAH525	Architecture and The City	DAB403	Visualisation 3
DAB325	**Architecture in The 20th Century**		**Minor Unit/Elective**

	Semester 6 (July)		Semester 6 (February)
DAB611	Architectural Design 6	DAB511	Architectural Design 5
DAH635	Architectural Technology 2	DAH530	Integrated Technologies 2
DAB403	Visualisation 3	DAH525	Architecture and The City
	Minor Unit/Elective	DAB325	Architecture in The 20th Century
	Semester 7 (February)		**Semester 7 (July)**
DAH710	**Architectural Design 7**	**DAH811**	**Architectural Design 8 (triple)**
DEH701	Research Methods		Minor Unit/Elective
	Minor Unit/Elective		
	Minor Unit/Elective		
	Semester 8 (July)		**Semester 8 (February)**
DAH811	**Architectural Design 8 (triple)**	**DAH710**	**Architectural Design 7**
	Minor Unit/Elective	**DEH701**	**Research Methods**
			Minor Unit/Elective
			Minor Unit/Elective
Total Credits (Year 3 & Year 4) taken at QUT = 192			

4.9. UNDERGRADUATE PROGRAM IN INTERIOR ARCHITECTURE

Program Specification

1	**Awarding Institution**		Universitas Indonesia
2	**Teaching Institution**		Universitas Indonesia
3	**Program**		Undergraduate Program in Interior Architecture
4	**Class**		Regular
5	**Degree Offered**		Sarjana Arsitektur (S.Ars)
6	**Accreditation / Recognition**		A Accredited from BAN-PT AUN-QA
7	**Language of Instruction**		Bahasa Indonesia and English
8	**Study Scheme (Full time/Part time)**		Full time
9	Entry Requirements		SMA Graduate/equal or D3/Polytechnique graduate
10	**Duration of Study**		4-year Program
	Semester	Total semester	Weeks / Semester
	Regular	8	17
	Short (optional)	3	8
11	Graduates' Profile: Sarjana Arsitektur Interior is a graduate who has the ability to design interior architecture with respect to context and local needs and based on the application of basic knowledge of interior architecture. Graduates are expected to demonstrate the ability as: • An Initiator- able to provide solutions to spatial problems critically and creatively with respect to local contexts and needs • A Designer - have the skill in assembling interior architectural elements and materials, have an • understanding of buildability aspects, and have a sensitivity in creating meaningful interior architectural design. • A Communicator – able to communicate ideas verbally and through writings, drawings, models and other media. • A Collaborator - able to work together with various stakeholders in the socitety to propose creative solutions for real problems		
12	**Graduates' Competencies:** 1. Able to create interior architectural design based on interiority by integrating basic interior architectural knowledge, applying design and communication skill, applying ability for imagination, creative thinking, innovation and three-dimensional thinking. 2. Able to synthesize the knowledge of interior architectural history and theories, including knowledge on art, culture and humanities that could influence the quality of interior architectural design. 3. Able to analyze context in which interior architecture is designed and integrate it through design that responds appropriately to the context. 4. Able to analyze the needs and characteristics of the users, knowledge of ergonomics and anthropometric and integrate them as the basis to define contextual and functional requirement on different types of interior space. 5. Able to construct the basic knowledge of interior architectural design methods. 6. Able to construct the basic knowledge of structural systems, construction, and building technology aspects that are relevant to interior architectural design. 7. Able to construct the basic knowledge of materials both technically and in relation to tactility and human experience in interior space.		

	8. Able to integrate the basic knowledge of natural and environmental systems into a sustainable interior architectural design. 9. Aware of various roles of interior architects in the society and professional aspects of interior architecture. 10. Able to gather information, formultae, analyze and synthesize problems that are related to interior architecture. 11. Able to apply mathematics, science, and basic engineering into the solution of complex technical problems. 12. Have integrity, able to demonstrate critical, creative, and innovative thinking, and have intellectual curiosity in solving the problems both at individual and group levels. 13. Able to offer alternative solutions towards various problems in the society, the community, and the nation. 14. Able to utilize information and communication technology. 15. Able to use verbal and written language in Bahasa Indonesia and English fluently in academic and non-academic activities. 16. Able to identify various innovative and independent entrepreneurial endeavors with respect to ethics.

13	**Course Composition**		
No	Type of Course	Credits	Percentage
i	University General Subjects	18	12,5%
ii	Basic Engineering Subjects	11	7,6%
iii	Architecture Core Subjects	90	62,5%
iv	Electives	25	17,4%
	Total	144	100%
14	**Total Credits for Graduation**		**144 SKS**

Job Opportunity

A graduate is able to work as an interior architect in the design of interior spaces of residential buildings; commercial buildings; hospitals and other public buildings. S/he can also work as a design principal in an interior design consultancy, act as a corporate designer or a designer of movie, TV, theater sets as well as working as an academic and as a critic.

CURRICULUM STRUCTURE UNDERGRADUATE INTERIOR ARCHITECTURE

KODE	MATA AJARAN	SUBJECT	CREDIT
CODE	**Semester 1**	**1st Semester**	
UIGE600002	MPK Terintegrasi B (Sains, Teknologi, Kesehatan)	Integrated Character Building (Science, Technology, Health)	6
UIGE600003	Bahasa Inggris	English	3
ENGE600001	Kalkulus 1	Calculus 1	3
ENAR601009	Pengantar Arsitektur	Introduction to Architecture	3
ENAI601001	Desain Dasar 1	Basic Design 1	5
		Sub Total	**20**
	Semester 2	**2nd Semester**	
UIGE600001	MPK Terintegrasi A (Sosial-Humaniora)	Integrated Character Building (Social-Humanities)	6
	Olah Raga/Seni	Sport/Arts	1
	Agama	Religion	3
ENGE600004	Aljabar Linear	Linear Algebra	4
ENAI602002	Desain Dasar 2	Basic Design 2	7
		Sub Total	**20**
	Semester 3	**3rd Semester**	
ENGE600005	Fisika Mekanika dan Panas	Physics (Mechanics and Thermal)	**3**
ENGE600006	Praktikum Fisika Mekanika dan Panas	Physics (Mechanics and Thermal) Laboratory	1
ENAI603003	Perancangan Arsitektur Interior 1	Interior Architectural Design 1	7
ENAI603010	Sejarah dan Teori Arsitektur 1	History and Theory of Architecture 1	3
ENAI603011	Metode Perancangan	Design Methods	3
ENAI603012	Teknologi Bangunan 1	Building Technology 1	3
		Sub Total	**20**
	Semester 4	**4th Semester**	
ENAI604004	Perancangan Arsitektur Interior 2	Architectural Design 2	8
ENAI604013	Sejarah dan Teori Arsitektur Interior	History and Theory of Interior Architecture	3
ENAI604014	Teknologi Bangunan 2	Building Technology 2	3
ENAI604015	Media Desain Digital	Digital Design Media	3
ENAI604016	Ergonomi	Ergonomics	**3**
		Sub Total	**20**
	Semester 5	**5th Semester**	
ENAI605005	Perancangan Arsitektur Interior 3	Architectural Design 3	9
ENAI605017	Teknologi Bangunan 3	Building Technology 3	3
	Pilihan	Elective	3
	Pilihan	Elective	3
		Sub Total	**18**
ENAI606006	Perancangan Arsitektur Interior 4	Architectural Design 4	9
ENAI606018	Furnitur: Konteks, Respon, Objek	Furniture: Context, Response, Object	3
	Pilihan	Elective	3
	Pilihan	Elective	3

		Sub Total	**18**
	Semester 7	**7th Semester**	
ENAI607007	Perancangan Arsitektur Interior 5	Interior Architectural Design 5	9
	Pilihan	Elective	3
	Pilihan*)	Elective*)	2
		Sub Total	**14**
	Semester 8	**8th Semester**	
ENAI600008	Skripsi/Tugas Akhir	Undergraduate Thesis/Final Project	6
	Pilihan	Elective	3
	Pilihan**)	Elective**)	3
	Pilihan*)	Elective*)	2
		Sub Total	**14**
		Total	**144**

ELECTIVES

Kode	Mata Kuliah	Elective Course	Credit
ENAI600019	Akustik	Acoustic	3
ENAI600020	Anatomi Ruang	Anatomy of Space	3
ENAI600021	Apresiasi Seni	Art Appreciation	3
ENAI600022	Desain Furnitur	Furniture Design	3
ENAR600026	Fotografi	Photography	3
ENAI600023	Gaya Hidup dan Arsitektur Interior	Lifestyle and Interior Architecture	3
ENAR600029	Komunikasi Desain Digital 2D	2D Digital Design Communication	3
ENAR600030	Komunikasi Desain Digital 3D	3D Digital Design Communication	3
ENAI600024	Materialitas dalam Arsitektur Interior	Materiality in Interior Architecture	3
ENAI600025	Objek Spasial	Spatial Object	3
ENAR600037	Psikologi Arsitektur	Architectural Psychology	3
ENAI600026	Ruang Pamer dan Narasi	Exhibition Space and Narrative	3
ENAI600027	Seni dan Arsitektur	Art and Architecture	3
ENAI600028	Tata Cahaya untuk Arsitektur Interior	Lighting Design for Interior Architecture	3
ENAI600029	Kajian Mandiri	Independent Study	3
ENAI600030	Kajian Perancangan**	Design Study**	3
ENAI600031	Kapita Selekta	Capita Selecta	3
ENAI600032	Kerja Praktek/KKN	Internship	3
ENAI600033	Topik Khusus Arsitektur Interior	Special Topic on Interior Architecture	3

*) Students are required to take minimum 2 subjects from outside Interior Architecture Study Program as electives
**) Design Study is required as elective for students who choose to take Final Project

4.10. UNDERGRADUATE PROGRAM IN CHEMICAL ENGINEERING

Program Specification

1	**Awarding Institution**		Universitas Indonesia and partner universities
2	**Teaching Institution**		Universitas Indonesia Universitas Indonesia and partner universities
3	**Programme Title**		Undergraduate Program in Chemical Engineering
4	**Type of Class**		Regular, Paralel, Internasional
5	**Degree Given**		Sarjana Teknik (S.T) Double degree: Sarjana Teknik (S.T) and Bachelor of Engineering (B.Eng)
6	**Accreditation status**		BAN-PT: A Accreditation AUN-QA
7	**Medium Language**		Indonesian and English
8	**Study Scheme(Full time/Part time)**		Full time
9	**Entry requirement**		High school /equivalent, or D3 / Polytechnique / equivalent, AND pass the entrance exam.
10	**Duration of Study**		Designed for 4 years
	Type of Semester	Number of semester	Number of weeks /semester
	Regular	8	16
	Short (optional)	3	8
12	**Graduate Profiles:** *Graduates of the undergraduate program of PSTK-FTUI should be able to contribute to the field of chemical engineering by applying chemical engineering principles with careful consideration of the engineering, economic, social, health and safety, energy, environment, sustainability, and ethics aspects; able to think critically, communicate effectively, and work together in multidisciplinary teams.*		
12	**Expected Learning Outcomes:** 1. Able to communicate effectively and work in multidisciplinary team. 2. Capable of critical, creative, and innovative thinking, and also have the intellectual ability to solve problems independently and and interdependently 3. Good at both spoken and written Bahasa Indonesia and English for academic and non-academic activity 4. Capable of utilizing communication information technology 5. Able to apply knowledge of mathematics and science in solving engineering problems 6. Able to apply concept of mass and energy balances in solving chemical engineering problems 7. Able to apply thermodynamic concepts in solving chemical engineering problems 8. Able to apply concepts of transport phenomena in solving chemical engineering problems 9. Able to apply the concepts of chemical reaction engineering 10. Able to use modern chemical engineering tools 11. Able to conducts experiments and analyze the data obtained		

12	12. Able to design components, systems, processes, and products related to chemical engineering profession with careful consideration of the engineering, economic, social, health and safety, energy, environment, sustainability, and ethics aspects 13. Able to provide solutions to various problems occurred wherever they live and work 14. Able to identify the kind of entrepreneurial approach needed based on innovation, self-reliance and ethics 15. Continuously develop oneself to contribute in solving local and global problems.		
13	**Course Composition**		
No	Type of Course	Credits	Percentage
i	General Course of University	18	12,4
ii	General Course of Engineering Faculty	25	17,2
iii	Skill Course	82	57
iv	Optional Course	12	8
v	Internship , Seminar, Final Project, Project	7	5
	Type of Course	144	100 %
14	**Total Credit Hours to Graduate**		**144 SKS**

Employment Prospects

A graduate of the chemical engineering and bioprocess technology study programs can be described as a "Universal Engineer" as they learn the basics of engineering such as thermodynamics, reaction kinetics and reactor design, separation processes, as well as transport phenomena (momentum, energy and mass). Graduates of chemical engineering department at UI have contributed in the following areas: energy (oil and gas industry), engineering contractor companies (engineering, procurement, construction and trial operation), chemical industry (petrochemicals, bulk and specialty chemicals), research and development of process and/or chemical products, and processing and synthesis of food products and pharmaceuticals.

CURRICULUM STRUCTURE UNDERGRADUATE CHEMICAL ENGINEERING

KODE	MATA AJARAN	SUBJECT	CREDIT
CODE	**Semester 1**	**1st Semester**	
Wajib/Compulsory			
UIGE600002	MPKT B	Integrated Characteristic Building Suject B	6
UIGE600003	Bahasa Inggris	English	3
ENGE 6 0 0003	Kalkulus	Calculus	4
ENGE 6 0 0009	Kimia Dasar	Basic Chemistry	2
ENCE601001	Pengantar Teknik Kimia	Introduction to Chemical Engineering	3
ENCE601002	Kecakapan Komunikasi	Communication Skill	**2**
	Jumlah	Total	20
Pilihan/Elective			
	Jumlah	Total	0
	Jumlah SKS Semester 1	Total Credit Term 1	20
	Semester 2	**2nd Semester**	
Wajib/Compulsory			
UIGE600001	MPKT A	Integrated Characteristic Building Suject A	6
UIGE600010-15	Agama	Religious Studies	2
ENGE 6 0 0004	Aljabar Linear	Liniear Algebra	4
UIGE600020 - 48	Olah Raga/ Seni	Sports/Arts	1
ENGE 6 0 0006	Fisika Mekanika dan Panas	Physics Mechanics and Heat	3
ENCE602003	Kimia Organik	Organic Chemistry	3
ENCE602004	Praktikum Kimia Dasar dan Kimia Organik	**Basic Chemistry and Organic Chemistry Lab.**	**1**
ENGE 6 0 0006	Praktikum Fisika Mekanika dan Panas	Physics Mechanics and Heat Lab	1
	Jumlah	Total	21
Pilihan/Elective			
	Jumlah	Total	0
	Jumlah SKS Semester 2	Total Credit Term 2	21
	Semester 3	**3rd Semester**	
Wajib			
ENGE 6 0 0007	Fisika Listrik, Magnet, Gelombang, dan Optik	Physics Electricity, Magnets, Wave, and Optics	3
ENCE603005	Komputasi Numerik	Numerical Computation	3
ENCE603006	Kimia Analitik Instrumental	Instrumental Analytical Chemistry	3
ENCE603007	Kimia Fisika	Physical Chemistry	3
ENCE603008	Praktikum Kimia Fisika dan Kimia Analitik	Physical Chemistry and Analytical Chemistry Lab	1
ENCE603009	Neraca Massa dan Energi	Mass and Energy Balance	3
ENCE603010	Peristiwa Perpindahan	Transport Phenomena	3
ENGE 6 0 0008	Praktikum Fisika Listrik, Magnet, Gelombang dan Optik	Physics Electricity, Magnets, Wave, and Optics Lab	1
	Jumlah	Total	20
Pilihan/Elective			

	Jumlah	Total	0
	Jumlah SKS Semester 3	Total Credit Term 3	20
	Semester 4	**4th Semester**	
Wajib/Compulsory			
ENCE604011	Pemodelan Teknik Kimia	**Chemical Engineering Modeling**	**3**
ENCE604012	Mekanika Fluida dan Partikel	**Fluid and Particle Mechanics**	**3**
ENGE 6 0 0010	Statistik dan Probabilistik	**Statistics and Probability**	**2**
ENCE604013	Termodinamika Teknik Kimia	**Chemical Engineering Thermodynamics**	**4**
ENCE604014	Perpindahan Kalor	**Heat Transfer**	**3**
ENCE604015	Menggambar Teknik Proses	**Process Engineering Drawing**	**2**
ENCE604016	Biologi Molekuler	**Molecular Biology**	**3**
	Jumlah	Total	**20**
Pilihan/Elective			
	Jumlah	Total	**0**
	Jumlah SKS semester 4	Total Credit Term 4	**20**
	Semester 5	**5th Semester**	
Wajib			
ENCE605017	Ilmu Bahan dan Korosi	**Materials and Corrosion Science**	**3**
ENGE 6 0 0012	Kesehatan, Keselamatan Kerja dan Lindung Lingkungan	**Health, Safety and Environment**	**2**
ENCE605018	Ekonomi Teknik	**Engineering Economics**	**3**
ENCE605019	Perpindahan Massa	**Mass Transfer**	**4**
ENCE605020	Praktikum UOP 1	**Unit Operation Lab 1**	**1**
ENCE605021	Teknik Reaksi Kimia 1	**Chemical Reaction Engineering 1**	**3**
ENCE605022	Simulasi Proses Kimia	**Simulation of Chemical Processes**	**3**
	Jumlah	**Total**	**19**
Pilihan/Elective			
	Jumlah		**0**
	Jumlah SKS semester 5	Total Credit Term 5	**19**
	Semester 6	**6th Semester**	
Wajib/Compulsory			
ENCE606023	Pengendalian Proses	**Process Control**	**3**
ENCE606024	Praktikum UOP 2	**Unit Operation Lab 2**	**1**
ENCE606025	Teknik Reaksi Kimia 2	**Chemical Reaction Engineering 2**	**3**
ENCE606026	Perancangan Alat Proses	**Process Equipment Design**	**3**
ENCE606027	Perancangan Produk Kimia	**Chemical Product Design**	**4**
	Jumlah	**Total**	**14**
Pilihan/Elective			
	Pilihan 1	**Elective 1**	**3**
	Pilihan 2	**Elective 2**	**3**
	Jumlah	**Total**	**6**
	Jumlah SKS semester 6	**Total Credit Term 6**	**20**
	Semester 7	**7th Semester**	
Wajib/Compulsory			
ENCE607028	Pengolahan Gas Bumi	**Natural Gas Processing**	**3**
ENCE607029	Manajemen Proyek Industri	**Industrial Project Management**	**2**
ENCE600030	Perancangan Pabrik	**Plant Design**	**4**

ENCE600031	Kerja Praktek	**Internship**	**2**
ENCE600032	Metodologi Penelitian dan Seminar	**Research Methodology & Seminars**	**2**
	Jumlah	**Total**	**13**
Pilihan/Elective			
	Pilihan 3	**Elective 3**	**3**
	Pilihan 4	**Elective 4**	**3**
	Jumlah	**Total**	**6**
	Jumlah SKS semester 7	**Total Credit Term 7**	**19**
	Semester 8	**8th Semester**	
Wajib/Compulsory			
ENCE600033	Skripsi	**Undergraduate Thesis/ Final Project**	**4**
ENCE600034	Kapita Selekta	**Capita Selecta**	**2**
	Jumlah	**Total**	**6**
Pilihan/Elective			
	Jumlah	**Total**	**0**
	Jumlah SKS semester 8	**Total Credit Term 8**	**6**

ELECTIVES

Kode	Mata Kuliah Pilihan Ganjil	Elective Course for Odd Semester	Credit
ENCE803101	Industri Oleokimia	Oleochemical Industry	3
ENCE801101	Teknologi Pangan	Food Technology	3
ENCE803102	Rekayasa Protein	Protein Engineering	3
ENCE801102	Teknologi Herbal	Herbal Technology	3
ENCE801103	Material Komposit	Composite Material	3
ENCE813103	Termodinamika Terapan	Applied Thermodynamics	3
ENCE803104	Sistem Dinamik	Dinamic System	3
ENCE811104	Sifat Termodinamika Hidrokarbon	Thermodynamic System of Hydro-carbon	3
ENCE801105	Teknologi Pelumas	Lubricant Engineering	3
ENCE803105	Teknologi Kriogenik	Cryogenic Engineering	3
ENCE801106	Teknik Pembakaran	Combustion Engineering	3
ENCE803106	Teknologi Plasma dan Ozon	Plasma and Ozone Engineering	3
ENCE801107	Katalisis Heterogen	Heterogeneous Catalyst	3
ENCE801108	Energi Berkelanjutan	Suistanable Energy	3
ENCE803107	Manajemen Resiko	Risk Management	3
ENCE803108	Topik Khusus 1	Special Topic 1	3
Kode	**Mata Kuliah Pilihan Genap**	**Elective Course for Even Semes-ter**	**Credit**
ENCE802101	Teknologi Penyimpanan dan Pengemasan	Packaging and Storage Technology	3
ENCE802102	Bioinformatika	Bioinformatics	3
ENCE802103	Teknologi Obat dan Kosmetik	Drugs and Cosmetics Technology	3
ENCE802104	Biomaterial	Biomaterial	3

ENCE802105	Pengolahan Minyak Bumi	Petroleum Processing	3
ENCE802106	Proses Petrokimia	Petrochemical Processing	3
ENCE802107	Teknologi Fotokatalisis	Photocatalysis Technology	3
ENCE812108	Teknologi Polimer	Polymer Engineering	3
ENCE802109	Pencegahan Pencemaran	Pollution Prevention	3
ENCE802110	Eksplorasi dan Produksi Hidro-karbon	Exploration and Production of Hydrocarbon	3
ENCE802111	Utilitas dan Pemeliharaan Pabrik	Utilities and Plant Maintenance	3
ENCE802112	Transportasi dan Pemanfaatan Gas Bumi	Natural Gas Transportation and Utilization	3
ENCE812113	Teknologi Pelepasan Terkendali Obat	Drug Controlled Released Technol-ogy	3
ENCE802114	Analisis dan Sintesis Sistem Proses Kimia	Analysis and Synthesis of Chemical Processes	3
ENCE802115	Teknologi Panas Bumi	Geothermal Technology	3
ENCE802116	Kecakapan Pemecahan Masalah	Problem-Solving Skills	3
ENCE802117	Topik Khusus 2	Special Topic 2	3

Resume	Wajib Universitas	18	Resume	General Course of University	18
	Wajib Fakultas	25		General Course of Engineering Faculty	25
	Wajib Program Studi	90		Skill Course	90
	Jumlah	133		Total	133
	Pilihan	12		Optional Course	12
	Total Beban Studi	145		Total Courses Load	145

COURSE STRUCTURE INTERNATIONAL UNDERGRADUATE CHEMICAL ENGINEERING

KODE	SUBJECT	CREDIT
CODE	**1st Semester**	
Compulsory		
	Academic Writing	3
	Physics Mechanics and Heat	4
	Calculus	4
	Basic Chemistry	2
	Statistics and Probability	2
ENCE611001	Introduction to Chemical Engineering	3
	Total	**18**
Elective		
	Total	**0**
	Total Credit Term 1	**18**
	2nd Semester	
Compulsory		
ENGE 6 0 0007	Physics Electricity, Magnets, Wave, and Optics	4
ENCE612002	Organic Chemistry	3
ENCE612003	Mass and Energy Balances	3
ENCE612004	Basic Chem. and Org. Chem. Lab.	1

	Linear Algebra	4
ENCE612005	Physical Chemistry	3
	Total	**18**
Elective		
	Total	**0**
	Total Credit Term 2	**18**
	3rd Semester	
Compulsory		
ENCE613006	Material Science and Corrosion	3
ENCE613007	Numerical Computation	3
ENCE613008	Instrumental Analytical Chemistry	3
ENCE613009	Fluid and Particle Mechanics	3
ENCE613010	Phys. Chem. and Anal. Chem. Lab.	1
ENCE613011	Chemical Engineering Thermodynamics	4
ENCE613012	Transport Phenomena	3
	Total	**20**
Elective		
	Total	**0**
	Total Credit Term 3	**20**
	4th Semester	
Compulsory		
ENCE614013	Chemical Engineering Modeling	3
ENCE614014	Mass Transfer	4
ENCE614015	Heat Transfer	3
ENCE614016	Process Engineering Drawing	2
ENCE614017	Chemical Process Simulation	3
ENCE614018	Molecular Biology	3
	Health, Safety, and Environment	2
	Total	**20**
Elective		
	Total	**0**
	Total Credit Term 4	**20**
	5th Semester	
Compulsory		
ENCE615019	Chemical Reaction Engineering 1	3
ENCE615020	Process Control	3
	Integrated Character Building Subject	6
	Engineering Economics	3
ENCE615021	Unit Operation Laboratory 1	1
ENCE615022	Industrial Project Management	2
	Total	**18**
Elective		
	Total	**0**
	Total Credit Term 5	**18**
	6th Semester	
Compulsory		
	Integrated Character Building Subject	6
	Sports / Arts	1

	Religion	2
ENCE616023	Unit Operation Laboratory 2	1
ENCE616024	Chemical Reaction Engineering 2	3
ENCE616025	Process Equipment Design	3
ENCE616026	Chemical Product Design	4
	Total	**20**
Elective		
	Total	**0**
	Total Credit Term 6	**20**
	7th Semester	
Compulsory		
ENCE617027	Plant Design	4
ENCE610028	On the Job Training	2
ENCE610029	Research Methodology and Seminar	2
ENCE610030	Capita Selecta	2
	Total	**10**
Elective		
	Elective 1	3
	Elective 2	3
	Elective 3	3
	Total	**9**
	Total Credit Term 7	**19**
	8th Semester	
Compulsory		
ENCE618031	Natural Gas Processing	3
ENCE610032	Skripsi	4
	Total	**7**
Elective		
	Elective 4	3
	Elective 5	3
	Total	**6**
	Total Credit Term 8	**13**

ELECTIVE COURSES

Code	Elective Course for Odd Semester	Credit	Code	Elective Course for Even Semester	Credit
ENCE617101	Applied Termodynamics	3	ENCE618104	Polymer Engineering	3
ENCE617102	Thermodynamic Prop. Hydrocarbons	3	ENCE618105	Controlled Release of Drugs	3
ENCE610103	Special Topics 1	3	ENCE618106	Special Topics 2	3

Resume	General Course of University	15
	General Course of Engineering Faculty	28
	Skill Course	88
	Total	131
	Optional Course	15

4.11. UNDERGRADUATE PROGRAM IN BIOPROCESS ENGINEERING

Program Specification

1	**Awarding Institution**		Universitas Indonesia
2	**Teaching Institution**		Universitas Indonesia
3	**Programme Title**		Undergraduate Program in Bioprocess Engineering
4	**Type of Class**		Regular
5	**Degree Given**		Sarjana Teknik (S.T)
6	**Accreditation status**		BAN-PT: A Accredited
7	**Medium Language**		Indonesia
8	**Study Scheme(Full time/Part time)**		Full time
9	**Entry requirement**		High School
10	**Duration of Study**		Scheduled for 4 years
	Type of Semester	Number of semester	Number of weeks /semester
	Regular	8	16
	Short (optional)	3	8
11	**Graduate Profiles:** *Bioprocess Engineering Graduates who are able to design components, systems, processes, and products related to bioprocess engineering profession by considering the aspects of*		
12	**Expected Learning Outcomes:** 1. Able to communicate effectively and work in multidisciplinary team. 2. Capable of critical thinking, creative, and innovative, and also have the intellectual ability to solve the problems at individual and group level. 3. Good at both spoken and written in Bahasa Indonesia and English for academic and non-academic activity. 4. Able to identify the kind of entrepreneurial effort which includes innovative and independent characteristic based on ethics 5. Capable of utilizing information communication technology. 6. Able to apply the knowledge of the mathematics and sciences in solving engineering problems. 7. Able to apply energy, momentum and mass balance concepts in solving bioprocess problems. 8. Able to apply bioenergetics concept in solving bioprocess problems. 9. Able to apply transport phenomena concepts in solving problems. 10. Able to apply bioprocess reaction engineering concepts in solving bioprocess problems. 11. Able to use the modern bioprocess engineering tools. 12. Able to conducts experiments and analyse the data of experiment results. 13. Able to design components, systems, processes, and products related to bioprocess engineering profession by considering the aspects of the engineering, economic, social, 14. Able to provide the solutions of various problems occurred in community, nation, and country. 15. Develop themselves continuously to contribute in solving local and global problems.		

13	**Course Composition**		
No	Type of Course	Credits	Percentage
i	University General Subjects	18	12.5 %
ii	Basic Engineering Subjects	25	17.4 %
iii	Core Subjects	85	59.0 %
iv	Elective Subjects	9	6.3 %
v	Internship , Seminar, Undergraduate Thesis, Project	7	4.9 %
	Total	144	100 %
14	Total Credit Hours to Graduate		144 SKS

Employment Prospects

The graduates be able to carrier in food industry; pharmaceutical ,cosmetics and biotechnology industries; oleochemicals; consulting and engineering company; environmental and renewable energy industry; govermnent; education and so on.

CURRICULUM STRUCTURE
UNDERGRADUATE BIOPROCESS ENGINEERING

KODE	MATA AJARAN	SUBJECT	CREDIT
CODE	**Semester 1**	**1st Semester**	
UIGE600002	MPKT B	Integrated Characteristic Building Suject B	6
UIGE600003	MPK Bahasa Inggris	English	3
ENGE 6 0 0003	Kalkulus	Calculus	4
ENGE 6 0 0009	Kimia Dasar	Basic Chemistry	2
ENBE601002	Pengantar Teknologi Bioproses	Introduction to Bioprocess Engineering	3
ENBE601002	Kecakapan Komunikasi	Communication Skill	2
	Jumlah SKS semester 1	Total Credit Term 1	20
	Semester 2	**2nd Semester**	
UIGE600001	MPKT A	Integrated Characteristic Building Suject A	6
ENGE 6 0 0005	Fisika Mekanika dan Panas	Physics Mechanics and Heat	3
ENGE 6 0 0004	Aljabar Linier	Liniear Algebra	4
ENBE601002	Biologi sel	Cell Biology	3
UIGE600010-15	MPK Agama	Religious Studies	2
UIGE600020 - 48	MPK Seni/Olah Raga	Sports/Arts	1
ENGE 6 0 0006	Praktikum Fisika Mekanika dan Panas	Physics Mechanics and Heat Lab	1
	Jumlah SKS semester 2	Total Credit Term 2	20
	Semester 3	**3rd Semester**	
ENGE 6 0 0007	Fisika Listrik, Magnet, Gelombang dan Optik.	Physics Electricity, Magnets, Wave, and Optics	3
ENBE603004	Kimia Organik	Organic Chemistry	3
ENBE603005	Kimia Analitik Instrumental	Instrumental Analytical Chemistry	3
ENBE603006	Kimia Fisika	Physical Chemistry	3
ENBE603007	Praktikum Kimia Fisika dan Kimia Analitik	Physical Chemistry and Analytical Chemistry Lab	1
ENBE603008	Neraca Massa dan Energi	Mass and Energy Balance	3
ENBE603009	Biologi Molekular	Molecular Biology	3
ENGE 6 0 0008	Praktikum Fisika Listrik, Magnet, Gelombang dan Optik	Physics Electricity, Magnets, Wave, and Optics Lab	1
	Jumlah SKS semester 3	Total Credit Term 3	20
	Semester 4	**4th Semester**	
ENBE604010	Peristiwa Perpindahan	**Transport Phenomena**	**3**
ENBE604011	Mekanika Fluida dan Partikel	**Fluid and Particle Mechanics**	**3**
ENBE604012	Komputasi Numerik	**Numerical Computation**	**3**
ENBE604013	Kultur Sel	**Cell Culture**	**3**
ENBE604014	Perpindahan Kalor	**Heat Transfer**	**3**
ENBE604015	Praktikum Biokimia	**Biochemistry Lab**	**2**
ENGE 6 0 0010	Statistik dan Probabilitas	**Statistics and Probability**	**2**
	Jumlah SKS semester 4	**Total Credit Term 4**	**19**
	Semester 5	**5th Semester**	
ENBE605016	Biokatalisis	**Biocatalysis**	**3**
ENBE605017	Separasi	**Separation**	**3**
ENGE 6 0 0011	Ekonomi Teknik	**Engineering Economics**	**3**

ENBE605018	Rekayasa Genetika	**Genetics Engineering**	**3**
ENBE605019	Praktikum Unit Operasi Bio-proses I	**Bioprocess Unit Operation Lab I**	**1**
ENBE605020	Rekayasa Biokimia	**Biochemical Engineering**	**3**
	Kesehatan, Keselamatan Kerja dan Lindung Lingkungan	**Health, Safety and Environment**	**2**
ENBE605021	Bioenergetika	**Bioenergetics**	**2**
	Jumlah SKS semester 5	**Total Credit Term 5**	**20**
	Semester 6	**6th Semester**	
ENBE606012	Simulasi Sistem Bioproses	**Bioprocess System Simulation**	**3**
ENBE606013	Praktikum Unit Operasi Bio-proses II	**Bioprocess Unit Operation Lab II**	**1**
ENBE606014	Rekayasa Bioreaktor	**Bioreactor Engineering**	**3**
ENBE606015	Perancangan Alat Bioproses	**Process Equipment Engineering**	**3**
ENBE606016	Perancangan Produk Hayati	**Biological Product Design**	**4**
ENBE606017	Pengendalian Proses	**Process Controlling**	**3**
	Pilihan Genap 1	**Even Elective 1**	**3**
	Jumlah SKS semester 6	**Total Credit Term 6**	**20**
	Semester 7	**7th Semester**	
ENBE607018	Waste Management of Biological Process	**Waste Management of Biological Process**	**3**
ENBE607019	Industrial Project Management	**Industrial Project Management**	**2**
ENBE607020	Plant Design	**Plant Design**	**4**
ENBE600021	Internship	**Internship**	**2**
ENBE600022	Research Methodology and Seminars	**Research Methodology and Seminars**	**2**
	Odd Elective 1	**Odd Elective 1**	**3**
	Total Credit Term 7	**Total Credit Term 7**	**16**
	Semester 8	**8th Semester**	
ENBE600023	Skripsi	**Undergraduate Thesis/ Final Project**	**4**
ENBE608024	Kapita Selekta	**Capita Selecta**	**2**
	Pilihan Genap 2	**Even Elective 2**	**3**
	Jumlah SKS semester 8	**Total Credit Term 8**	**9**

ELECTIVES

Kode	Mata Kuliah Pilihan Ganjil	Elective Course for Odd Semester	Credit
ENCE803101	Industri Oleokimia	Oleochemical Industry	3
ENCE801101	Teknologi Pangan	Food Technology	3
ENCE803102	Rekayasa Protein	Protein Engineering	3
ENCE801102	Teknologi Herbal	Herbal Technology	3
ENCE801103	Material Komposit	Composite Material	3
ENCE813103	Termodinamika Terapan	Applied Thermodynamics	3
ENCE803104	Sistem Dinamik	Dinamic System	3
ENCE811104	Sifat Termodinamika Hidrokarbon	Thermodynamic System of Hydro-carbon	3
ENCE801105	Teknologi Pelumas	Lubricant Engineering	3
ENCE803105	Teknologi Kriogenik	Cryogenic Engineering	3

ENCE801106	Teknik Pembakaran	Combustion Engineering	3
ENCE803106	Teknologi Plasma dan Ozon	Plasma and Ozone Engineering	3
ENCE801107	Katalisis Heterogen	Heterogeneous Catalyst	3
ENCE801108	Energi Berkelanjutan	Suistanable Energy	3
ENCE803107	Manajemen Resiko	Risk Management	3
ENCE803108	Topik Khusus 1	Special Topic 1	3
Kode	**Mata Kuliah Pilihan Genap**	**Elective Course for Even Semester**	**Credit**
ENCE802101	Teknologi Penyimpanan dan Pengemasan	Packaging and Storage Technology	3
ENCE802102	Bioinformatika	Bioinformatics	3
ENCE802103	Teknologi Obat dan Kosmetik	Drugs and Cosmetics Technology	3
ENCE802104	Biomaterial	Biomaterial	3
ENCE802105	Pengolahan Minyak Bumi	Petroleum Processing	3
ENCE802106	Proses Petrokimia	Petrochemical Processing	3
ENCE802107	Teknologi Fotokatalisis	Photocatalysis Technology	3
ENCE812108	Teknologi Polimer	Polymer Engineering	3
ENCE802109	Pencegahan Pencemaran	Pollution Prevention	3
ENCE802110	Eksplorasi dan Produksi Hidro-karbon	Exploration and Production of Hydro-carbon	3
ENCE802111	Utilitas dan Pemeliharaan Pabrik	Utilities and Plant Maintenance	3
ENCE802112	Transportasi dan Pemanfaatan Gas Bumi	Natural Gas Transportation and Utilization	3
ENCE812113	Teknologi Pelepasan Terkendali Obat	Drug Controlled Released Technology	3
ENCE802114	Analisis dan Sintesis Sistem Proses Kimia	Analysis and Synthesis of Chemical Processes	3
ENCE802115	Teknologi Panas Bumi	Geothermal Technology	3
ENCE802116	Kecakapan Pemecahan Masalah	Problem-Solving Skills	3
ENCE802117	Topik Khusus 2	Special Topic 2	3

Resume	Wajib Universitas	18	Resume	General Course of University	18
	Wajib Fakultas	25		General Course of Engineering Faculty	25
	Wajib Program Studi	92		Skill Course	92
	Jumlah	135		Total	135
	Pilihan	9		Optional Course	9
	Total Beban Studi	144		Total Courses Load	144

4.12. UNDERGRADUATE PROGRAM IN INDUSTRIAL ENGINEERING

Program Specification

1	**Awarding Institution**		Universitas Indonesia
2	**Teaching Institution**		Universitas Indonesia
3	**Programme Title**		Undergraduate Program in Industrial Engineering
4	**Class**		Regular, Parallel, International
5	**Final Award**		Sarjana Teknik (S.T)
6	**Accreditation / Recognition**		BAN-PT: A - accredited AUN - QA
7	**Language(s) of Instruction**		Bahasa Indonesia and English
8	**Study Scheme (Full Time / Part Time)**		Full Time
9	**Entry Requirements**		High school /equivalent, or D3 / Polytechnique / equivalent, AND pass the entrance exam.
10	**Study Duration**		Designed for 4 years
	Type of Semester	Number of semester	Number of weeks /semester
	Regular	8	17
	Short (optional)	3	8
11	**Graduate Profiles:** *An Industrial engineer who has the capabilities of designing, improving, operating and maintaining integrated and multi-level manufacturing and service systems by means of analytical, computational and experimental methods with regard to professionalism values in order to increase the productivity and quality.*		
12	Expected Learning Outcomes: 1. Ability to implement the knowledge of mathematics, science and engineering principles. 2. Ability to design and perform research projects, and analyze and interpret data. 3. Ability to design a system, component or process to fulfill the needs within realistic limitations such as economics, environment, social, politics, ethics, health and safety, feasibility and sustainability. 4. Ability to identify, analyze and solve engineering problems. 5. Ability to use techniques, tools and methods in engineering practices. 6. Ability to take part of a multidisciplinary team. 7. Ability to work professionally with ethical responsibility. 8. Has a broad knowledge to understand the impact of engineering problem solving in a global, economic, environmental and social context. 9. Ability to learn independently and continuously (lifelong learning). 10. Ability to use verbal and non-verbal communications in Bahasa and English for academic and non-academic purposes. (UI competency) 11. Ability to use information and communication technology. (UI competency) 12. Ability to identify the opportunity of establishing entrepreneurship based on innovation, ethics and independence (UI competency). 13. Ability to be a critical thinker, creative and innovative and has the intellectual curiosity to solve problems in an individual and group level (UI competency). 14. Ability to give alternative solutions of problems occurred in the society and country level in Indonesia (UI competency).		

13	**Classification of Subjects**		
No	Classification	Credit Hours (SKS)	Percentage
i	University General Subjects	18	12.5 %
ii	Basic Engineering Subjects	25	17.4 %
iii	Core Subjects	71	49.3 %
iv	Elective Subjects	21	14.6 %
v	Internship, Seminar, Undergraduate Thesis, Project	9	6.2 %
	Total	144	100 %
14	**Total Credit Hours to Graduate**		**144 SKS**

Career Prospects

Public or private manufacturing and service industries, such as production management, HR, maintenance system, logistics and supply chain management, finance and banking, management and IT consulting services.

CURRICULUM STRUCTURE UNDERGRADUATE INDUSTRIAL ENGINEERING

KODE	MATA AJARAN	SUBJECT	SKS
	Semester 1	**1st Semester**	
UIGE600002	MPKT B	Integrated Characteristic Building Subject B	6
UIGE600003	Tulisan Akademik	Academic Writing	3
ENGE600001	Kalkulus 1	Calculus 1	3
ENIE601001	Pengantar Teknik Industri	Introduction to Industrial Engineering	2
ENIE601002	Pengantar Ilmu Ekonomi	Introduction to Economics	2
ENIE601003	Pengetahuan Bahan	Material Sciences	2
		Sub Total	**18**
	Semester 2	**2nd Semester**	
	Agama	Religion	2
ENGE600004	Aljabar Linear	Linear Algebra	4
ENGE600005	Fisika Mekanika dan Panas	Mechanics and Thermal Physics	3
ENGE600006	Prakrikum Fisika Mekanika dan Panas	Mechanics and Thermal Physics Lab	1
UIGE600001	MPKT A	Integrated Characteristic Building Subject A	6
	Olah Raga/Seni	Sport/Art	1
	Menggambar Teknik	Engineering Drawing	2
		Sub Total	**18**
	Semester 3	3rd Semester	
ENGE600007	Fisika Listrik, Optik dan Gelombang	Optics, Electricity and Wave Physics	3
ENGE600008	Praktikum Fisika Listrik, Optik dan Gelombang	Optics, Electricity and Wave Physics Lab	1
ENIE603003	Perancangan Kerja, Metode, dan Standar Kerja	Work Design, Methods, and Standards	3
ENIE603004	Akuntansi Biaya	Cost Accounting	2
ENIE603005	Proses Produksi + Praktikum	Production Process + Lab	3
ENGE600011	Ekonomi Teknik	Engineering Economics	3
ENIE603006	Statistik Dasar	Basic Statistics	3
ENIE603007	Programa Linear	Linear Programming	3
		Sub Total	**18**
	Semester 4	4th Semester	
ENIE604008	Pengantar Mekanika dan Elektronika Pabrik	Introduction to Plant Mechanics and Electronics	2
ENIE604009	Faktor Manusia dalam Rekayasa dan Desain + Praktikum	Human Factor in Engineering & Design + Lab	3
ENIE604010	Sistem Pemeliharaan	Maintenance Systems	2
ENIE604011	Statistik Industri + Praktikum	Industrial Statistics + Lab	3
ENIE604012	Perancangan Produksi dan Pengendalian Persediaan + Praktikum	Production Planning and Inventory Control + Lab	3

ENIE604013	Organisasi & Psikologi Industri	Organization & Industrial Psychology	3
ENIE604014	Penelitian Operasi	Operation Research	3
ENIE604015	Praktikum Komputasi	Computation Lab	1
		Sub Total	**20**
	Semester 5	5th Semester	
ENIE605016	Perancangan Tata Letak Pabrik	Plant Layout Design	3
ENIE605017	Perancangan Produk + Praktikum	Product Design + Lab	3
ENIE605018	Analisa Kelayakan Industri	Industrial Feasibillity Analysis	3
ENIE605019	Sistem Kualitas	Quality Systems	3
ENIE605020	Pemodelan Sistem + Praktikum	System Modeling + Lab	3
ENIE605021	Sistem Produksi + Praktikum	Production Systems + Lab	3
ENIE605022	Manajemen Proyek Industri	Industrial Project Management	2
		Sub Total	**20**
	Semester 6	**6th Semester**	
ENIE606023	Kesehatan, Keselamatan Kerja dan Lindung Lingkungan	Occupational, Health, Safety & Environment	2
ENIE606024	Manajemen Rantai Pasok	Supply Chain Management	3
ENIE606025	Simulasi Industri + Praktikum	Industrial Simulation + Lab	3
ENIE606026	Perancangan Teknik Industri + Praktikum	Industrial Engineering Design + Lab	3
ENIE606027	Sistem Informasi	Information System	3
ENIE606028	Pilihan 1	Elective 1	3
ENIE606029	Pilihan 2	Elective 2	3
		Sub Total	**20**
	Semester 7	**7th Semester**	
ENIE607030	Kapita Selekta Industri	Special Topics in Industrial Engineering	2
ENIE600031	Kerja Praktek	Internship	2
	Pilihan 1	Elective 1	3
	Pilihan 2	Elective 2	3
	Pilihan 3	Elective 3	3
	Pilihan 4	Elective 4	3
		Sub Total	16
	Semester 8	8th Semester	
ENIE600032	Skripsi	Final Project in Industrial Engineering	5
ENIE608033	Manajemen Teknologi	Technology Management	2
	Pilihan 5	Elective 5	3
		Sub Total	**10**
		TOTAL	**144**

ELECTIVES

KODE	MATA AJARAN PILIHAN SEMESTER GANJIL		SKS
	MATA AJAR	SUBJECT	
ENIE605034	Analisis Multivariat	Multivariate Analysis	3
ENIE605035	Keterampilan Interpersonal	Interpersonal Skills	3
ENIE605036	Manajemen Siklus Hidup Produk	Product Life Cycle Management	3
ENIE605037	Makro Ergonomi	Macro Ergonomics	3
ENIE605038	Sistem Keuangan dan Investasi	Finance and Investments	3
ENIE605039	Manajemen Inovasi	Innovation Management	3
ENIE605040	Manajemen Hubungan Konsumen	Customer Relationship Management	3
ENIE605041	Operasi Ramping	Lean Operations	3
ENIE605042	Konfigurasi Sistem Manufaktur	Reconfigurable Manufacturing System	3
ENIE605043	Programa Linear dan Stokastik	Linear and Stochastic Programming	3
ENIE605044	Teori Antrian	Queuing Theory	3
ENME803196	Propulsi Jet dan Roket	Jet and Rocket Propulsion	4
ENME803174	Manajemen Risiko	Risk Management	4

KODE	MATA AJARAN PILIHAN SEMESTER GENAP		SKS
	MATA AJAR	SUBJECT	
ENIE606045	Data Mining	Data Mining	3
ENIE606046	Rekayasa Sistem	Systems Engineering	3
ENIE606047	Analisis Daya Saing Perusahaan	Enterprise Competitiveness Analysis	3
ENIE606048	Optimasi Lanjut	Advanced Optimization	3
ENIE606049	Manufaktur dan Inovasi Berkelanjutan	Sustainable Manufacturing and Innovation	3
ENIE606050	Simulasi dan Pemodelan Digital Manusia	Human Digital Modeling and Simulation	3
ENIE606051	Keputusan, Ketidakpastian dan Resiko	Decision Uncertainties and Risk	3
ENIE606052	Logistik Maritim	Maritime Logistics	3
ENIE606053	Manajemen Energi	Energy Management	3
ENIE606054	Berpikir Disain	Design Thinking	3
ENIE606055	Teknik dan Aplikasi Numerik	Numerical Methods and Application	3
ENIE606056	Rekayasa Proses Bisnis	Business Process Reengineering	3
ENIE606057	Algoritma dan Pemrograman	Algorithm and Programming	3
ENIE606058	Metode Heuristik dalam Optimasi	Heuristic Methods in Optimization	3
ENIE606059	Programa Kendala	Constraint Programming	3

COURSE STRUCTURE INTERNATIONAL UNDERGRADUATE INDUSTRIAL ENGINEERING

KODE	MATA AJARAN	SUBJECT	SKS
	Semester 1	**1st Semester**	
UIGE600002	MPKT B	Integrated Characteristic Building Subject B	6
UIGE600003	Tulisan Akademik	Academic Writing	3
ENGE600001	Kalkulus 1	Calculus 1	3
ENIE601001	Pengantar Teknik Industri	Introduction to Industrial Engineering	2
ENIE601002	Pengantar Ilmu Ekonomi	Introduction to Economics	2
ENIE601003	Pengetahuan Bahan	Material Sciences	2
		Sub Total	**18**
	Semester 2	**2nd Semester**	
	Agama	Religion	2
ENGE600004	Aljabar Linear	Linear Algebra	4
ENGE600005	Fisika Mekanika dan Panas	Mechanics and Thermal Physics	3
ENGE600006	Prakrikum Fisika Mekanika dan Panas	Mechanics and Thermal Physics Lab	1
UIGE600001	MPKT A	Integrated Characteristic Building Subject A	6
	Olah Raga/Seni	Sport/Art	1
	Menggambar Teknik	Engineering Drawing	2
		Sub Total	**18**
	Semester 3	3rd Semester	
ENGE600007	Fisika Listrik, Optik dan Gelombang	Optics, Electricity and Wave Physics	3
ENGE600008	Praktikum Fisika Listrik, Optik dan Gelombang	Optics, Electricity and Wave Physics Lab	1
ENIE603003	Perancangan Kerja, Metode, dan Standar Kerja	Work Design, Methods, and Standards	3
ENIE603004	Akuntansi Biaya	Cost Accounting	2
ENIE603005	Proses Produksi + Praktikum	Production Process + Lab	3
ENGE600011	Ekonomi Teknik	Engineering Economics	3
ENIE603006	Statistik Dasar	Basic Statistics	3
ENIE603007	Programa Linear	Linear Programming	3
		Sub Total	**18**
	Semester 4	4th Semester	
ENIE604008	Pengantar Mekanika dan Elektronika Pabrik	Introduction to Plant Mechanics and Electronics	2
ENIE604009	Faktor Manusia dalam Rekayasa dan Desain + Praktikum	Human Factor in Engineering & Design + Lab	3
ENIE604010	Sistem Pemeliharaan	Maintenance Systems	2
ENIE604011	Statistik Industri + Praktikum	Industrial Statistics + Lab	3
ENIE604012	Perancangan Produksi dan Pengendalian Persediaan + Praktikum	Production Planning and Inventory Control + Lab	3
ENIE604013	Organisasi & Psikologi Industri	Organization & Industrial Psychology	3

ENIE604014	Penelitian Operasi	Operation Research	3
ENIE604015	Praktikum Komputasi	Computation Lab	1
		Sub Total	**20**
	Semester 5	5th Semester	
ENIE605016	Perancangan Tata Letak Pabrik	Plant Layout Design	3
ENIE605017	Perancangan Produk + Praktikum	Product Design + Lab	3
ENIE605018	Analisa Kelayakan Industri	Industrial Feasibillity Analysis	3
ENIE605019	Sistem Kualitas	Quality Systems	3
ENIE605020	Pemodelan Sistem + Praktikum	System Modeling + Lab	3
ENIE605021	Sistem Produksi + Praktikum	Production Systems + Lab	3
ENIE605022	Manajemen Proyek Industri	Industrial Project Management	2
		Sub Total	**20**
	Semester 6	**6th Semester**	
ENIE606023	Kesehatan, Keselamatan Kerja dan Lindung Lingkungan	Occupational, Health, Safety & Environment	2
ENIE606024	Manajemen Rantai Pasok	Supply Chain Management	3
ENIE606025	Simulasi Industri + Praktikum	Industrial Simulation + Lab	3
ENIE606026	Perancangan Teknik Industri + Praktikum	Industrial Engineering Design + Lab	3
ENIE606027	Sistem Informasi	Information System	3
ENIE606028	Pilihan 1	Elective 1	3
ENIE606029	Pilihan 2	Elective 2	3
		Sub Total	**20**
	Semester 7	**7th Semester**	
ENIE607030	Kapita Selekta Industri	Special Topics in Industrial Engineering	2
ENIE600031	Kerja Praktek	Internship	2
	Pilihan 1	Elective 1	3
	Pilihan 2	Elective 2	3
	Pilihan 3	Elective 3	3
	Pilihan 4	Elective 4	3
		Sub Total	16
	Semester 8	8th Semester	
ENIE600032	Skripsi	Final Project in Industrial Engineering	5
ENIE608033	Manajemen Teknologi	Technology Management	2
	Pilihan 5	Elective 5	3
		Sub Total	**10**
		TOTAL	**144**

No.	Mata Kuliah	SKS
1.	Data Mining	3
2.	Analisis Multivariat	3
3.	Keterampilan Interpersonal	3
4.	Rekayasa Sistem	3
5.	Analisis Daya Saing Perusahaan	3

6.	Optimasi Lanjut	3
7.	Sustainable Manufacturing and Innovation	3
8.	Product Life Cycle Management	3
9.	Makro Ergonomi	3
10.	Simulasi dan Pemodelan Digital Manusia	3
11.	Sistem Keuangan dan Investasi	3
12.	Innovation Management	3
13.	Customer Relationship Management (CRM)	3
14.	Lean Manufacturing	3
15.	Reconfigurable Manufacturing System	3
16.	Decision Uncertainties and Risk	3
17.	Algoritma dan Pemrograman	3
18.	Rekayasa Proses Bisnis	3
19.	Meotde Heuristik dalam Optimasi	3
20.	Programa Kendala	3
21.	Programa Linear dan Stokastik	3
22.	Teknik dan Aplikasi Numerik	3
23.	Teori Antrian	3
24.	Logistik Maritim	3
25.	Manajemen Energi	3
26.	Berpikir Disain	3

Electives can also be taken at the Partner University starting from 6th Semester. Detail List of Courses will be provided by the Partner Universities as soon as possible.

PROFESSIONAL PROGRAM
FOR ARCHITECT

5. PROFESSIONAL PROGRAM FOR ARCHITECT

Program Specification

1	**Awarding Institution**	Universitas Indonesia	
2	**Teaching Institution**	Universitas Indonesia	
3	**Program**	Architects Professional Program	
4	**Class**	Regular	
5	**Degree Offered**	Arsitek (Ar.)	
6	**Accreditation / Recognition**	-	
7	**Language of Instruction**	Bahasa Indonesia	
8	**Study Scheme (Full Time / Part Time)**	Full Time	
9	**Entry Requirement**	Graduate from Undergraduate Architecture Program	
10	**Duration of Study**	1 year	
	Semester	Total Semester	Weeks/semester
	Regular	2	17
	Short (optional)	-	-
11.	**Graduates profile:** Graduates with the ability to design professionally with compliance to codes and regulation to fulfill the competency as architect.		
12.	**Graduates' Competencies:** 1. Able to create architectural design that complies to codes related to services to clients, compliance to local building codes, and technical aspects of building structure, and construction, mechanical and electrical. 2. Able to manage architectural consultation service that comprises of preliminary design, building permit, design development and the completion of tender documents. 3. Able to integrate knowledge of ethical codes and architects' professional codes of conduct into professional practice. 4. Able to integrate knowledge on theory of architecture and sustainability into professional practice. 5. Able to explain the principles of consultation administration and project management.		
13	**Course Composition**		
No	**Type of Courses**	**Credits**	**Percentage**
	University General Subjects	**0**	**0%**
	Basic Engineering Subjects	**0**	**0%**
	Architecture Core Subjects	**21**	**87,5%**
	Electives	**3**	**12,5%**
	Total	**24**	**100%**
14.	**Total Credits for Graduation**		**24 Credit Semester Unit**

COURSE STRUCTURE
PROFESSIONAL PROGRAM FOR ARCHITECT

KODE	MATA AJAR	SUBJECT	sks
	Semester 1	**Semester 1**	
ENAR701001	Proyek Perancangan I	Design Project 1	6
ENAR701003	Etika dan Praktik Keprofesian	Professional Ethics and Practice	3
ENAR701004	Teknologi dan Lingkungan Berkelanjutan	Technology and Sustainable Environment	3
		Sub Total	**12**
	Semester 2	**Semester 2**	
ENAR702002	Proyek Perancangan II	Design Project II	6
ENAR702005	Teori Perancangan Arsitektur	Architectural Design Theory	3
	Pilihan*)	Elective*)	3
		Sub Total	**12**
		Total	**24**

*In addition to taking courses Elective Subjects for Professional Program, student can also take Compulsory Subjects and Elective Subjects available in Master of Architecture Program or other department which are equal with the Program.

ELECTIVES

MATA AJAR PILIHAN			
KODE	**MATA AJAR**	**SUBJECT**	**SKS**
ENAR700006	Building Information Modelling	Building Information Modelling	3
ENAR700007	Kapita Selekta	Capita Selecta	3

MASTER PROGRAM

6. MASTER PROGRAM

6.1. MASTER IN CIVIL ENGINEERING

Program Specification

1.	**Awarding Institution**	Universitas Indonesia	
2.	**Teaching Institution**	Universitas Indonesia	
3.	**Programme Title**	Graduate Program in Civil Engineering	
4.	**Class**	Regular	
5.	**Final Award**	Master Teknik (M.T)	
6.	**Accreditation / Recognition**	BAN-PT: A - accredited	
7.	**Language(s) of Instruction**	Bahasa Indonesia and English	
8.	**Study Scheme (Full Time / Part Time)**	Full Time	
9.	**Entry Requirements**	Bachelor Degree (S1)	
10.	**Study Duration**	Designed for 2 years	
	Type of Semester	Number of Semester	Number of weeks / semester
	Regular	4	17
	Short (optional)	3	8
11.	**Graduate Profiles:** Magister of Civil Engineering who has specialization, profesional ethic and an ability to conduct independent research and to pursue study.		
12.	Expected Learning Outcomes: 1. Problem Recognation and Solving: *Synthesize the solution to an ill-defined engineering problem into a broader context that may include public policy, social impact, or business objectives. (L5)* 2. Experiment: *Specify an experiment to meet a need and conduct the experiment, analyze and explain the resulting data (L5)* 3. Technical Specialization *Evaluate a design of a complex design or process, or evaluate a validity of newly created knowledge or technologies in a traditional or emerging advanced specialized* technical area appropriate to civil engineering. *4. Sustainability: Analyze* systems of engineered works, whether traditional or emergent, for sustainable performance. (L4) *5. Communication: Plan, compose, and integrate* the verbal, written, virtual, and graphical communication of a project to technical and nontechnical audiences (L5). *6. Lifelong Learning: Identify* additional knowledge, skills, and attitudes appropriate for professional practice. (L4)		
13	**Classification of Subjects**		
No.	**Classification**	**Credit Hours (SKS)**	**Percentage**
i	**Program Study Subjects**	**9**	**21**
ii	**Specialization Subjects**	**12 - 21**	**28-49**
iii	**Elective Subjects**	**3 - 12**	**7-28**
iv	**Seminar, Thesis, Scientific Publications**	**10**	**23**
	Total	**43**	**100 %**
14.	**Total Credit Hours to Graduate**		**43 Credits**

CURRICULUM 2016 MASTER PROGRAM CIVIL ENGINEERING

Kode	Mata Ajaran	Subject	SKS	Major							
				STR	GT	TR	SDA	TL	MP	MK	MI
	Semester 1	**1st Semester**									
ENCV801001	Matematika Terapan	Matematika Terapan	3	3	3	3	3	3	3	3	3
ENCV801002	Sistim Rekayasa dan nilai	Engineering System & Value	3	3	3	3	3	3	3	3	3
ENCV801101	Struktur Beton Pratekan	Prestressed Concrete Structure	3	3							
ENCV801102	Dinamika Struktur	Structural Dynamics	3	3							
ENCV 801 201	Mekanika Tanah Lanjut	Advanced Soil Mechanics	3		3	P					
ENCV 801 202	Investigasi Geoteknik Lanjut	Geotechnic Investigation	3		3						
ENCV 801 301	Rekayasa dan Kendali Lalu Lintas	Traffic Control Engineering	3			3					
ENCV 801 302	Sistem Transportasi	Transportation System	3			3					
ENCV 801 401	Hidrologi Teknik	Engineering Hydrology	3				3				
ENCV 801 402	Hidrolika Air Tanah	Ground Water Hydraulics	3				3				
ENCV801501	Man. Resiko Lingkungan	Environmental Risk Management	3					3			
ENCV801502	Teknologi pengolahan limbah padat : Operasional dan Disain	Solid Waste Process Technology : Operational and Design	3					3			
ENCV 801 601	Investasi Proyek dan Keuangan	Project Investment and Finance	3						3	3	3
ENCV 803 601	Manajemen SDM dan Komunikasi Proyek	Human Resource and Project Communication Management	3						3	3	3
	Wajib kekhususan	Major Compulsary Courses		6	6	6	6	6	6	6	6
		Sub Total		**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
	Semester 2	**2nd Semester**									
ENCV802003	Metodologi Penelitian	Research Metodology	3	3	3	3	3	3	3	3	3
ENCV802101	Struktur Bang. Tahan Gempa	Earthquake Resistance Building	3	3							
ENCV802102	Metode Elemen Hingga	Finite Element Method	3	3							

ENCV802103	Mekanika Material Lanjut	Advanced Mechanics of Material	3	P							
ENCV802104	Struktur Baja Lanjut	Advanced Steel Structure	3	P							
ENCV802105	Teknologi Beton & Beton Bertulang Lanjut	Concrete Technology & Adv. Reinforced Concrete	3	P							
ENCV802201	Stabilitas Lereng dan Perbaikan Tanah	Slope Stabilization and Soil Improvement	3		3						
ENCV802202	Geoteknik Lingkungan	Environmental Geotechnics	3		3						
ENCV802203	Metode Numerik Dalam Geoteknik	Numerical Methods in Geotechnical Engineering	3		P						
ENCV 802 301	Ekonomi Transportasi	Transportation Economics	3			3					
ENCV 802 302	Kebijakan Transportasi	Transportation Policy	3			3					
ENCV 802 303	Keselamatan Transportasi	Transportation Safety	3			3					
ENCV802401	Mekanika Fluida Lingkungan	Environmental Fluid Mechanics	3				3				
ENCV802402	Manajemen Sumber Daya Air	Water Resources Management	3				3				
ENCV802403	Bangunan Air	Hydraulics Structures	3				3				
ENCV802501	Kontaminasi dan remediasi tanah	Contaminating and Soil Remediation	3					3			
ENCV802502	Rekayasa Air Limbah Lanjutan (PFKB)	Advanced Waste Water Engineering	3					3			
ENCV802503	Limbah Menjadi Energi	Waste to Energy	3					3			
ENCV802504	Kontrol Emisi	Emission Control	3					3			
ENCV802505	Efisiensi Sumberdaya dengan Teknologi _ Analisis Daur Hidup (LCA)	Technology of Resources Efficiency - Life Cycle Analysis (LCA)	3					P			
ENCV802506	Pencegahan Pencemaran	Pollution Prevention	3					P			
ENCV802507	Dinamika Sistem Lingkungan	Environmental System Dynamics	3					P			
ENCV802601	Manajemen Waktu dan Biaya Proyek	Time & Cost Management	3						3	3	P
ENCV802602	Manajemen Kualitas dan Risiko Proyek	Quality & Risk Management	3						3	3	3

ENCV802603	Manajemen Pengadaan, Administrasi Kontrak dan Klaim	Procurement Management, Contract & Claim Administration	3						3	3	3
ENCV802604	Metode dan Peralatan Konstruksi Lanjut	Advanced Construction Methods & Equipments	3						P	P	P
ENCV802605	Kerangka Hukum & Kelembagaan	Legal & Institutional Framework	3						P	P	3
	Wajib Kekhususan	Major Compulsary Courses		6	6	9	9	12	9	9	9
		Sub Total		**9**	**9**	**12**	**12**	**15**	**12**	**12**	**12**
	Semester 3	**3rd Semester**									
ENCV803101	Bangunan Lepas Pantai	Offshore Structure	3	P							
ENCV803102	Struktur Jembatan	Bridge Structure	3	P							
ENCV803103	Struktur Bangunan Tinggi	Highrise Structural Building	3	P							
ENCV803104	Pelat dan Cangkang	Plate and Shell	3	P							
ENCV 803 201	Teknik Pondasi Lanjut dan Galian Dalam	Adv. Foundation Engineering & Deep Excavation	3		3						
ENCV 803 202	Dinamik dan Kegempaan Geoteknik	Diynamics & Earthquake in Geotechnic	3		3						
ENCV 803 203	Topik Khusus Geoteknik	Special Topics in Geotechnics	3		P						
ENCV 803 301	Model Transportasi					P					
ENCV 803 302	Perencanaan dan Pengoperasian Angk Umum	Public Tranport Management and Planning	3			P					
ENCV 803 303	Perencanaan dan Pengelolaan Pelabuhan	Harbor Transportation Management and Planning	3			P					
ENCV 803 304	Perencanaan dan Pengelolaan Lapangan Terbang	Airport Planning and Management	3			P					
ENCV 803 305	Peranc Geometrik Jalan Lanjut	Advanced Road Geometric Design	3			P					
ENCV803306	Rekayasa Perkerasan Jalan Lanjut	Advanced Pavement Engineering	3			P					
ENCV803307	Material Perkerasan Jalan Lanjut	Advanced Highway Materials	3			P					
ENCV803308	Strategi Preservasi Jalan	Road Preservation Strategy	3			P					

ENCV803309	Perencanaan Transportasi Jalan Rel	Railway Transportation Planning	3			P					
ENCV803310	Aset - Lingkungan dan Keselamatan	Assets, Environment and Safety	3			P					
ENCV803311	Konstruksi dan Perbaikan Infrastruktur Jalan Rel	Construction & Rehabilitation of Railway Infrastructure	3			P					
ENCV803312	Teknologi Transportasi Jalan Rel Lanjut	Advanced Railways Transportation Technology	3			P					
ENCV803313	Pengelolaan dan pengoperasian angkutan jalan Rel	Operational & Maintanance of Railway Transportation	3			P					
ENCV803314	Transportasi dan Lingkungan	Transportation & Environment	3			P					
ENCV 803 315	Transportasi Logistik	Logistic Transportation				P					
ENCV 803 401	Ekohidrologi	Ecohydrology					3				
ENCV803402	Manajemen daya rusak air	Water Related Disaster Management	3				P				
ENCV803403	Audit Kesehatan DAS	Watershed Vulnerability Assessment	3				P				
ENCV803404	Operasi dan pemeliharaan Bangunan Air	Operation & Maintanance of Hydraulics Structures	3				P				
ENCV803501	Manajemen Kualitas Air Limbah dan Perkotaan	Urban water Quality Management	3					p			
ENCV803502	Audit Lingkungan	Environmental Audit	3					p			
ENCV803503	Kimia Lingkungan Lanjut	Advanced Environmental Chemistry	3					p			
ENCV 803 601	Manajemen SDM dan Komunikasi Proyek	Human Resource and Project Communication Management	3						3	3	P
ENCV803602	Manajemen Teknologi Strategis untuk Peningkatan Daya Saing	Technology Management for Competitive Advantage	3						P	P	P
ENCV 803 603	Infrastruktur dan Pengembangan Wilayah	Infrastructure and Regional Development							P	P	3
ENCV 803 604	Manajemen Aset Infrastruktur	Infrstructure Asset Management							P	P	P

ENCV 803 605	Sistem Manajemen Kesehatan, Keselamatan Kerja dan Lingkungan	Management System of Health, Safety and Environment	3						P	3	P
ENCV800001	Seminar	Research Proposal	1	1	1	1	1	1	1	1	1
	Wajib Kekhususan	Major Compulsary Courses		0	6	0	3	0	3	6	3
		Sub Total		**1**	**7**	**1**	**4**	**1**	**4**	**7**	**4**
	Semester 4	**4th Semester**									
ENCV 804 101	Topik Khusus Struktur	Special Topics in Structural Engineering		P							
ENCV 800 002	Tesis	Thesis		8	8	8	8	8	8	8	8
ENCV800003	Publikasi ilmiah	Scientific Publications	2	2	2	2	2	2	2	2	2
		Sub Total									
	Total SKS Mata Kuliah Wajib Program Studi	Total Credits of Civil Engineering Compulsary Courses		9	9	9	9	9	9	9	9
	Total SKS Mata Kuliah Wajib Kekhususan	Total Credits of Major Compulsary Courses		12	18	15	18	18	18	21	18
	Total SKS Mata Kuliah Pilihan	Total Credits of Elective courses		12	6	9	6	6	6	3	6
		TOTAL		**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**

6.2. MASTER PROGRAM IN MECHANICAL ENGINEERING

Program Specification

1	**Awarding Institution**		Universitas Indonesia
2	**Teaching Institution**		Universitas Indonesia
3	**Programme Title**		Master Program in Mechanical Engineering
4	**Class**		Regular
5	**Final Award**		Magister Teknik (M.T.)
6	**Accreditation / Recognition**		BAN-PT: A – accredited
7	**Language(s) of Instruction**		Bahasa Indonesia and English
8	**Study Scheme (Full Time / Part Time)**		Full Time
9	**Entry Requirements**		Bachelor Degree in Mechanical Engineering, Math and Physics; pass the entrance exam.
10	**Study Duration**		Designed for 2 years
	Type of Semester	Number of semester	Number of weeks /semester
	Regular	4	17
	Short (optional)	1	8
11	**Graduate Profiles:** Graduates who have the character of leadership and excellence in scholarship, research, expertise and professionalism in the field of Mechanical Engineering		
12	**List of Graduates Competences:** 1. Ability to develop a logical, critical, systematic, and creative thinking through scientific researches, design creation or art product in the field of science and technology, by also putting attention to humanities value related to his/her field of expertise; to formulate scientific concept and research result based on principles and scientific ethics in a form of thesis or other equivalent forms and is uploaded on the unversity's web page, as well as scientific article published by accredited international journal. 2. Ability to carry out an academic validation or in-depth study in the field of his/her expertise to solve problems in society or industry which is relevant for his/her knowledge and skill development 3. Ability to formulate ideas and scientific argument with responsibility and based on academic ethics, and to publish it through a media to the society 4. Ability to identify academic field which is his/her research object, and to position it in a research map via an interdisciplinary approach 5. Ability to take a decision in the context of problem solving of science and technology which puts attention to humanities values based on analytical study or experiment to a given information or data 6. Ability to manage, develop, and maintain working network with colleagues in wide research institutions and communities 7. Ability to self-improve his/her learning capacity 8. Ability to save/manage and subsequently find his/her research data for the purpose of guaranteeing originality and avoiding plagiarism 9. Ability to take responsibility toward society and to comply to professional ethics in solving engineering problems 10. Ability to carry out a life-long learning, including to get an access to knowledge of current issues		

12	As a Universitas Indonesia student, every graduate of Mechanical Engineering Undergraduate Program should have the following compenteces as follow: 1. Able to use information and communication technology; 2. Able to think critically, creatively, and innovatively and have intellectual curiosity to solve the individual and group problems; 3. Able to use verbal and writing communication in good bahasa Indonesia and English for academic or non-academic acitivity; 4. Has an integrity and able to respect others; 5. Able to identify entrepreneurship efforts which show innovation and autonomy based on ethics In the 2016 Mechanical Engineering Graduate Program curriculum, there are 6 Specialization Programs that can be chosen by the students according to their academic ability dan interest, which are: 1. Energy Conversion 2. Bulding Utilities and Fire Safety 3. Design and Manufacture 4. Automation and Manufacture System 5. Vehicle Engineering and Heavy Equipment 6. Marine Resources and Technology Specifically, besides the 10 points of Graduates Competences, the students of The Graduates Program will have the competences in accordance to their specialization. 1. Competence in the field of Energy Conversion: Ability to analyse, apply and design a mechanical system by utilizing the law and phenomenon from the cutting-edge technology related to the field of energy conversion and conservation. 2. Competence in the field of Building Utility System and Fire Safety: Ability to analyse, apply and design the building utility efficiently and the fire safety system based on performance for the office and industrial buildings. 3. Competence in the field of Design and Manufacturing: Ability to analyse, apply and desing a product, manfacture and assembly process by integrating the latest technology in the field of desing and manufacturing. 4. Competence in the field of Automation and Manufacturing System: Ability to analyse, apply and desing a manufacturing system and automation that will be used for a development and product manufacturing process by utilizing the cutting-edge technology in the field of manufacturing and automation. 5. Competence in the field of Vehicle Engineering and Heavy Equipment: Ability to analyse and design a vehicle system and heavy equipment for several fields, such as: industrial, construction, minerals and energy. 6. Competence in the field of Maritime Resources and Technology: Ability to analyse and design a system and apply the maritime technology related to the utilization of sustainable maritime resources

13	**Classification of Subjects**		
No	Classification	Credit Hours (SKS)	Percentage
i	Department Courses	10	25 %
ii	Majoring Courses	20	50 %
iii	Seminar & Thesis	10	25 %
	Total		100 %
14	**Total Credit Hours to Graduate**		40 SKS

Career Prospects

Graduates of Mechanical Engineering has devoted itself in various fields, including automotive industry, oil and gas, heavy machinery, educational institutions, research institutions and other industries

CURRICULUM STRUCTURE OF MAGISTER PROGRAM OF MECHANICAL ENGINEERING

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 1	1st SEMESTER	
ENME801001	Matematika Teknik Lanjut	Advanced Engineering Mathematics	4
	Wajib Peminatan	Specialization Course	8
		Subtotal	**12**
	SEMESTER 2	2nd SEMESTER	
ENME802002	Desain Penelitian	Design of Experiment	2
ENME802003	Penulisan Akademik	Academic Writing	2
ENME802004	Komputasi Teknik	Engineering Computation	2
	Wajib Peminatan	Specialization Course	4
		Subtotal	**10**
	SEMESTER 3	3rd SEMESTER	
ENME800005	Publikasi Ilmiah	Scientific Publication	2
ENME800006	Seminar	Seminar	2
	Wajib Peminatan	Specialization Course	4
	Pilihan Peminatan #1	Elective Course #1	4
		Subtotal	**10**
	SEMESTER 4	4th SEMESTER	
ENME800007	Tesis	Thesis	6
	Pilihan Peminatan #2	Elective Course #2	4
		Subtotal	**4**
		Total	**44**

1. Major in Energy Conversion

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 1	1st SEMESTER	
ENME801001	Matematika Teknik Lanjut	Advanced Engineering Mathematics	4
ENME801101	Termodinamika Lanjut	Advanced Thermodynamics	4
ENME801102	Dinamika Fluida dan Perpindahan Kalor Lanjut	Advanced Fluid Dynamics and Heat Transfer	4
		Subtotal	**12**
	SEMESTER 2	2nd SEMESTER	
ENME802002	Desain Penelitian	Design of Experiment	2
ENME802003	Penulisan Akademik	Academic Writing	2
ENME802004	Komputasi Teknik	Engineering Computation	2
ENME802103	Optimasi Sistem Energi	Energy Optimization System	4
		Subtotal	**10**
	SEMESTER 3	3rd SEMESTER	
ENME800005	Publikasi Ilmiah	Scientific Publication	2

Flow Diagram of Subjects

ENME800006	Seminar	Seminar	2
ENME803104	Pembangkitan Daya Termal	Thermal Power Generation	4
	Pilihan Peminatan #1	Elective Course #1	4
		Subtotal	**12**
	SEMESTER 4	**4th SEMESTER**	
ENME800007	Tesis	Thesis	6
	Pilihan Peminatan #2	Elective Course #2	4
		Subtotal	**10**
		Total	**44**

List of Elective Courses in Energy Conversion Stream

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 3	**3rd SEMESTER**	
ENME803105	Motor Pembakaran Dalam	Internal Combustion Engine	4
ENME803106	Pengukuran dan Visualisasi Aliran Terapan	Applied Flow Measurement and Vizualization	4
ENME803107	Aplikasi CFD	CFD Application	4
ENME803196	Propulsi Jet dan Roket	Jet and Rocket Propulsion	4
ENME803125	Energi dan Lingkungan	Energy and Enviroment	4
ENME803108	Teknik Refrijerasi	Refrigeration Engineering	4
ENME803124	Audit Energi	Energy Audit	4
KODE	**SEMESTER 4**	**4th SEMESTER**	**SKS**
ENME804109	Rekayasa Penukar Kalor dan Massa	Heat and Mass Transfer Engineering	4
ENME804110	Teknik Pembakaran	Combustion Engineering	4
ENME804111	Teknik Aerodinamika	Aerodynamics Engineering	4
ENME804112	Mesin – Mesin Turbo	Turbomachinery	4

2. Major in Building Utilities and Fire Safety

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 1	**1st SEMESTER**	
ENME801001	Matematika Teknik Lanjut	Advanced Engineering Mathematics	4
ENME801129	Radiasi	Radiation	2
ENME801113	Sistem Ventilasi dan Tata Udara	Ventilation and Air Conditioning System	4
ENME801130	Pengantar Dinamika Api	Introduction to Fire Dynamics	2
		Subtotal	**12**
	SEMESTER 2	**2nd SEMESTER**	
ENME802002	Desain Penelitian	Design of Experiment	2
ENME802003	Penulisan Akademik	Academic Writing	2
ENME802004	Komputasi Teknik	Engineering Computation	2
ENME802131	Sistem Proteksi Kebakaran	Fire Protection System	2
ENME802132	Sistem Mekanikal dan Elektrikal Gedung	Building Mechanical and Electrical System	2

		Subtotal	**10**
	SEMESTER 3	**3rd SEMESTER**	
ENME800005	Publikasi Ilmiah	Scientific Publication	2
ENME800006	Seminar	Seminar	2
ENME803133	Tugas Perencanaan Sistem Utilitas Bangunan Gedung	Assignment of Building Utility System Design	2
ENME801121	Sistem Manajemen Energi	Energy Management System	2
	Pilihan Peminatan #1	Elective Course #1	4
		Subtotal	**8**
	SEMESTER 4	**4th SEMESTER**	
ENME800007	Tesis	Thesis	6
	Pilihan Peminatan #2	Elective Course #2	4
		Subtotal	**10**
		Total	**44**

List of Elective Courses in Building Utilities and Fire Safety Stream

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 3	**3rd SEMESTER**	
ENME803134	Dinamika Api dalam Ruang dan Pemodelan	Enclosure Fire Dynamics and Modelling	4
ENME803115	Sistem Ruang Bersih	Clean Room	4
ENME803116	Sistem Plambing dan Pengolahan Air Limbah	Plumbing and Waste Water Treatment System	4
ENME803117	Asesmen Lingkungan Bangunan Gedung	Building Environment Assessment	4
ENME803135	Teknik dan Strategi Pemadaman Kebakaran	Fire Fighting Engineering and Strategy	4
ENME803136	Manajemen Keselamatan Kebakaran pada Bangunan	Fire Safety Management in Building	4
KODE	**SEMESTER 4**	**4th SEMESTER**	**SKS**
ENME802103	OPTIMASI SISTEM ENERGI	ENERGY SYSTEM OPTIMIZATION	4
ENME804118	Perancangan Sistem Mekanikal Bangunan Gedung	Mechanical system for Building	4
ENME804119	Akustik	Accoustics	4
ENME804120	Manajemen Pemeliharaan Utilitas Bangunan Gedung	Maintenance Management of Building Utility	4
ENME804137	Teknik Investigasi Kebakaran	Fire Investigation Engineering	4
ENME804138	Evaluasi dan Pemeliharaan Sistem Proteksi Kebakaran	Evaluation and Maintenance of Fire Protection System	4
ENME804139	Proteksi Kebakaran di Industri Proses	Fire Protection in Process Industry	4

3. Major in Design and Manufacturing

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 1	**1st SEMESTER**	
ENME801001	MatematikaTeknik Lanjut	Advanced Engineering Mathematics	4
ENME801140	Material dan Proses Manufaktur	Materials and Manufacturing Processes	4

ENME801141	Metodologi Perancangan dan Pengembangan Produk	Product Design and Development Methodology	4
		Subtotal	**12**
	SEMESTER 2	**2nd SEMESTER**	
ENME802002	Desain Penelitian	Design of Experiment	2
ENME802003	Penulisan Akademik	Academic Writing	2
ENME802004	Komputasi Teknik	Engineering Computation	2
ENME802142	Integrasi Teknologi Perancangan dan Manufaktur	Design and Manufacturing Technology Integration	4
		Subtotal	**14**
	SEMESTER 3	**3rd SEMESTER**	
ENME800005	Publikasi Ilmiah	Scientific Publication	2
ENME800006	Seminar	Seminar	2
ENME803143	Kegagalan Mekanikal	Mechanical Failure	4
	Pilihan Peminatan #1	Elective Course #1	4
		Subtotal	**12**
	SEMESTER 4	**4th SEMESTER**	
ENME800007	Tesis	Thesis	6
	Pilihan Peminatan #2	Elective Course #2	4
		Subtotal	**10**
		Total	**44**

List of Elective Courses in Design and Manufacturing Stream

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 3	**3rd SEMESTER**	
ENME803145	Pengembangan Produk Komposit	Composite Product Development	4
ENME803146	Finite Element dan Multiphysics	Finite Element and Multiphysics	4
ENME803147	Perancangan dan Pengembangan Produk Edukasi	Toy Production Design	4
ENME803161	Proses Permesinan Mikro	Micromachining Process	4
ENME803144	Dinamika Sistem Mekanikal	Dynamics of Mechanical System	4
	SEMESTER 4	**4th SEMESTER**	
ENME804148	Perancangan untuk Manufaktur dan Perakitan	DESIGN FOR MANUFACTURING AND ASSEMBLY	4
ENME804149	Kebisingan dan Getaran	Noise and Vibration	4
ENME804162	Laser Assisted Process	Laser Assisted Process	4

4. Major in Manufacturing System and Automation

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 1	**1st SEMESTER**	
ENME801001	MatematikaTeknik Lanjut	Advanced Engineering Mathematics	4
ENME801150	Manajemen Sistem Informasi Manufaktur	Management of Manufacturing Information System	4
ENME801151	Proses dan Sistem Manufaktur	Manufacturin System and Processes	4
		Subtotal	**12**
	SEMESTER 2	**2nd SEMESTER**	
ENME802002	Desain Penelitian	Design of Experiment	2
ENME802003	Penulisan Akademik	Academic Writing	2
ENME802004	Komputasi Teknik	Engineering Computation	2
ENME802152	Otomasi dan Robotika	Automation and Robotics	4
		Subtotal	**10**
	SEMESTER 3	**3rd SEMESTER**	
ENME800005	Publikasi Ilmiah	Scientific Publication	2
ENME800006	Seminar	Seminar	2
ENME803153	Sistem Machine Vision	Machine Vision System	4
	Pilihan Peminatan #1	Elective Course #1	4
		Subtotal	**12**
	SEMESTER 4	**4th SEMESTER**	
ENME800007	Tesis	Thesis	6
	Pilihan Peminatan #2	Elective Course #2	4
		Subtotal	**10**
		Total	**44**

List of Elective Courses in Manucfacuturing Technology and Automation Stream

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 3	**3rd SEMESTER**	
ENME803154	Sistem Manajemen Produksi dan Mutu	Quality and Production Management System	4
ENME803174	Manajemen Risiko	Risk Management	4
	SEMESTER 4	**4th SEMESTER**	
ENME804155	CAD/CAM	CAD/CAM	4
ENME804156	Penilaian Kinerja Manufaktur	Manufacturing Performance Assessment	4

5. Major in Vehicle Engineering and Heavy Equipment

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 1	**1st SEMESTER**	
ENME801001	Matematika Teknik Lanjut	Advanced Engineering Mathematics	4
ENME801163	Rekayasa Kendaraan dan Alat Berat	Vehicle Engineering and Heavy Duty Equipment	4
ENME801164	Sistem Penggerak Mula dan Penyalur Daya	Prime Mover and Powertrain System	4
		Subtotal	**12**
	SEMESTER 2	**2nd SEMESTER**	
ENME802002	Desain Penelitian	Design of Experiment	2
ENME802003	Penulisan Akademik	Academic Writing	2
ENME802004	Komputasi Teknik	Engineering Computation	2
ENME802165	Rekayasa Rangka dan Badan Kendaraan	Vehicle Frame and Body Engineering	4
		Subtotal	**10**
	SEMESTER 3	**3rd SEMESTER**	
ENME800005	Publikasi Ilmiah	Scientific Publication	2
ENME800006	Seminar	Seminar	2
ENME803166	Sistem Pengendalian Kendaraan	Vehicle Control System	4
	Pilihan Peminatan #1	Elective Course #1	4
		Subtotal	**12**
	SEMESTER 4	**4th SEMESTER**	
ENME800007	Tesis	Thesis	6
	Pilihan Peminatan #2	Elective Course #2	4
		Subtotal	**10**
		Total	**44**

List of Elective Courses in Vehicle Engineering and Heavy Equipment Stream

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 3	**3rd SEMESTER**	
ENME803167	Teknologi Mutakhir Kendaraan	Modern Vehicle Technology	4
ENME803195	Peralatan Pengeboran Minyak dan Gas	Oil and Gas Drilling Equipment	4
	SEMESTER 4	**4th SEMESTER**	
ENME804168	Teknik Kendaraan Rel	Railway Engineering	4
ENME804197	Mesin dan Peralatan Pengangkat	Hanlding and Construction Equipment	4
ENME804198	Sistem Kendali dan Stabilitas Pesawat Terbang	Airplane Control System and Stability	4

6. Major in Marine Resources and Technology

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 1	1st SEMESTER	
ENME801001	Matematika Teknik Lanjut	Advanced Engineering Mathematics	4
ENME801179	Termofluida Lanjut	Advanced Thermofluid	4
ENME801180	Sumber Daya Maritim	Maritime Resources and Technologies	4
		Subtotal	**12**
	SEMESTER 2	2nd SEMESTER	
ENME802002	Desain Penelitian	Design of Experiment	2
ENME802003	Penulisan Akademik	Academic Writing	2
ENME802004	Komputasi Teknik	Engineering Computation	2
ENME802181	Teknologi dan Manajemen Maritim	Maritime Engineering and Management	4
		Subtotal	**10**
KODE	SEMESTER 3	3rd SEMESTER	
ENME800005	Publikasi Ilmiah	Scientific Publication	2
ENME800006	Seminar	Seminar	2
ENME803182	Energi Laut	Ocean Energy	4
	Pilihan Peminatan #1	Elective Course #1	4
		Subtotal	**12**
KODE	SEMESTER 4	4th SEMESTER	
ENME800007	Tesis	Thesis	6
	Pilihan Peminatan #2	Elective Course #2	4
		Subtotal	**10**
		Total	**44**

List of elective courses in Marine Resources and Technology Study Program

Kode	MATA KULIAH	SUBJECT	sks
	SEMESTER 3	3rd SEMESTER	
ENME803183	Bangunan Lepas Pantai	Marine and Offshore Structure*	4
ENME803184	Manajemen Transportasi Laut dan Kepelabuhan	Sea Transportation and Port Management *	4
ENME803185	Hukum dan Peraturan Kemaritiman	Maritime Law and regulation*	4
	SEMESTER 4	4th SEMESTER	
ENME804186	Kapal Khusus	Special Ship Project	4
ENME804187	Manajemen Produksi Kapal	Ship Production Management*	4
ENME802103	Optimasi Sistem Energi	Energy Optimization System	4
ENME804188	Manajemen Energi Maritim	Maritime Energy Management	4
ENME804189	Keselamatan Kemaritiman	Maritime Safety	4
ENME804190	Teknik Las Lanjut	Advanced Welding Engineering	4

6.3. MASTER PROGRAM IN ELECTRICAL ENGINEERING

Program Specification

1	**Awarding Institution**		Universitas Indonesia
2	**Teaching Institution**		Universitas Indonesia
3	**Programme Title**		Master Program in Electrical Engineering
4	**Class**		Regular
5	**Final Award**		Magister Teknik (M.T.)
6	**Accreditation / Recognition**		BAN-PT: A – accredited
7	**Language(s) of Instruction**		Bahasa Indonesia
8	**Study Scheme (Full Time / Part Time)**		Full Time
9	**Entry Requirements**		Pass the entrance exam, and pass s1/d iv from electrical engineering study program, mechanical engineering, computer science, informatic engineering, mathematic, physics, and equivalent program
10	**Study Duration**		Designed for 2 years
	Type of Semester	Number of semester	Number of weeks /semester
	Regular	4	16
	Short (optional)	1	8
11	**Graduate Profiles:** Magister of engineering who is able to formulate solution to complex problems in the field of electrical engineering trough advancement technology based research using inter and multydicipline approach in accordance with professional ethics.		
12	**Expected learning outcomes:** General outcomes: 1. Able to model electrical engineering system into mathematical equations 2. Able to formulate the problem solving in electrical engineering with the proper research methods 3. Able to produce innovative independent scientific work 4. Able to apply concepts of professional management in the field of electrical engineering Majoring in electronics and photonics: • Able to design advanced electronics and photonics devices • Able to design photonics system • Able to study state of the art of technology in the field of electronics and photonics. Majoring in communication engineering • Able to evaluate the performance of system and telecommunication network • Able to design communication system and radar system • Able to design communication system and radar system equipments • Able to recommend the latest technology in the field of telecommunications and radar Majoring in control engineering • Able to evaluate control system performance • Able to recommend the latest control methode based on the system need • Able to desing the latest control in the real systems • Able to study the latest research in fielf of control engineering Majoring in electrical power engineering and energy: • Able to specify technical and non-technical aspects in electric power industrial utilization • Able to recommend strategy to improve eficiency, quality, and power quality in electrical engineering system • Able to combine new and renewable generator to electrical network system • Able to evaluate strategy and risk mitigation in the development of electric power system who are reliable, secure, enviromentally friendly		

12	Majoring in multimedia and information network: • Able to design advanced information network • Able to design advanced computer system • Able to develop the latest technology based system in the field of information technology and multimedia Majoring in information network security: • Able to design physical infrastructure in a comprehensive manner that meets high security rules • Able to analyse information security management in new technological concept for national indonesia development • Able to evaluate the information network security based on the rule of technology, legislation, and regulations that apply Majoring in telecommunication management: • Able to evaluate the technical and non-technical aspects of a telecommunication system • Able to recommend strategies and technology for the improvement of the service quality system • Able to develop insight of technology which oriented to national interests and indonesia development • Able to evaluate strategic and regulative policies that are applied to the telecommunication system Majoring in electrical power management and energy: • Able to formulate the technical and non-technical aspects, management, and business development and utilization on electrical power industrial economics including energy issues • Able to recommend strategies for increased efficiency, quality, and the quality of the electrical power system • Able to integrate new energy power generation and renewable electric network system • Able to recommend risk mitigation strategies and on the development of electric power system which are reliable, secure, and environmentally friendly		
13	**Classification of Subjects**		
No	Classification	Credit Hours (SKS)	Percentage
i	Core Subjects	19	45.23%
ii	Majoring Courses	23	54.77%
	Total		100 %
14	**Total Credit Hours to Graduate**		42 SKS

Career Prospects

The graduates of this program have been employed in various industrial companies such as power engineering, IT, electronic, oil & gas, telecommunication and other related inductries. Some of graduates were even employed before the graduation.
Some occupation or job titles that are suitable for this program are electrical engineer, process engineer, control engineer, instrumentation engineer, program manager, project manager, technical manager and professional lecturers.

POST-GRADUATE CURRICULUM COURSES
DEPARTMENT OF ELECTRICAL ENGINEERING

ELECTRONICS ENGINEERING AND PHOTONICS

	MATA KULIAH	SUBJECT	
	Semester 1	**1st Semester**	
ENEE800001	Matematika Terapan	Applied Mathematics	3
ENEF801001	Disain Rangkaian Terpadu	Integrated Circuit Design	3
ENEF801002	Nanoelektronika	Nanoelectronics	3
ENEF800303	Divais Fotonik Lanjut	Advanced Photonic Devices	3
		Subtotal	**12**
	Semester 2	**2nd Semester**	
ENEF802004	Disain MEMS	MEMS Design	3
ENEF802005	Divais Solid State	Solid State Devices	3
ENEF802006	Divais Hetero-struktur	Hetero - structure Devices	3
ENEE802002	Metodologi Penelitian	Research Method	3
		Subtotal	**12**
	Semester 3	3rd Semester	
ENEE803003	Manajemen dan Keekonomian Proyek Teknik	Engineering Economy and Project Management	3
ENEF803007	Sistem Optik Koheren	Optical Coherent System	2
ENEF803008	Sistem Pengukuran dengan Metode Optik	Optical Method for Measurement System	3
		Subtotal	8
	Semester 4	**4rd Semester**	
ENEE804004	Tesis	Thesis	8
ENEE804005	Publikasi Ilmiah	Publication	2
		Subtotal	**10**
		TOTAL	**42**

TELECOMMUNICATIONS ENGINEERING AND RADAR

	MATA KULIAH	SUBJECT	
	Semester 1	**1st Semester**	
ENEE800001	Matematika Terapan	Applied Mathematics	3
ENET801001	Jaringan Komunikasi Broadband	Mobile Broadband System Networks	3
ENET801002	Sistem Radar dan Disain	Radar Systems and Design	3
ENET801003	Pengolahan Sinyal dan Aplikasi	Digital Signal Processing and Applications	3
		Subtotal	**12**
	Semester 2	**2nd Semester**	
ENEE802002	Metodologi Penelitian	Research Methodology	3
ENET802004	Teknik Sistem Medis Nirkabel	Wireless Medical System Engineering	3
ENET802005	Disain RF Lanjut	RF Engineering Design	3
ENET802006	Disain Antena Modern	Modern Antenna Design	3

		Subtotal	**12**
	Semester 3	3rd Semester	
ENET803007	Teknologi Komunikasi Gelombang Cahaya	Lightwave Communication Technology	3
ENET803008	Topik Khusus Telekomunikasi	Special Topic in Telecommunication	2
ENEE803003	Manajemen dan Keekonomian Proyek Teknik	Engineering Economy and Project Management	3
		Subtotal	**8**
	Semester 4	**4rd Semester**	
ENEE804004	Tesis	Thesis	8
ENEE804005	Publikasi Ilmiah	Scientific Publication	2
		Subtotal	**10**
		TOTAL	**42**

CONTROL TECHNIQUES

	MATA KULIAH	**SUBJECT**	
	Semester 1	**1st Semester**	
ENEE801001	Matematika Terapan	Applied Mathematics	3
ENEC801001	Kendali Analog dan Dijital	Analog and Digital Control	3
ENEC801002	Topik Khusus Riset Terkini dalam Rekayasa	Special Topic on Advance Research in Engineering	3
ENEC801003	Pemodelan dan Rekayasa Sistem	Modeling and System Engineering	3
		Subtotal	**12**
	Semester 2	**2nd Semester**	
ENEE802002	Metodologi Penelitian	Research Method	3
ENEC802004	Sistem Kendali Multivariabel	Multivariable Control Systems	3
ENEC802005	Robotika Cerdas	Intelligent Robotics	3
ENEC802006	Kendali Adaptif dan Optimal	Adaptive and Optimal Control	3
		Subtotal	**12**
	Semester 3	3rd Semester	
ENEC803007	Kendali dan Sistem Cerdas	Intelligent System and Control	3
ENEC803008	Kendali Lanjut Sistem Penggerak Elektrik	Advanced control on electric drive system	2
ENEE803003	Manajemen dan Keekonomian Proyek Teknik	Engineering Economy and Project Management	3
		Subtotal	**8**
	Semester 4	**4rd Semester**	
ENEE804004	Tesis	Thesis	8
ENEE804005	Publikasi Ilmiah	Scientific Publication	2
		Subtotal	**10**
		TOTAL	**42**

ELECTRIC POWER AND ENERGY ENGINEERING

	MATA KULIAH	SUBJECT	
	Semester 1	**1st Semester**	
ENEE801001	Matematika Terapan	Applied Mathematics	3
ENEP801001	Operasi dan Kendali Pembangkitan Tenaga Listrik	Power Generation Operation and Control	3
ENEP801002	Mutu dan Kualitas Daya Sistem Tenaga Listrik	Electrical Power System Quality	3
ENEP801003	Energi dan Lingkungan	Energy and Environment	3
		Subtotal	**12**
	Semester 2	**2nd Semester**	
ENEE802002	Metodologi Penelitian	Research Method	3
ENEP802004	Sistem Dinamik dan Pemodelan	Dynamic System and Modeling	3
ENEP802005	Manajemen dan Ekonomi Energi	Economics Energy and Management	3
ENEP802006	Elektronika Daya Industri	Industrial Power Electronics	3
	Semester 3	**3rd Semester**	
ENEE803003	Manajemen dan Keekonomian Proyek Teknik	Engineering Economy and Project Management	3
ENEP803007	Topik Khusus Ketenagalistrikan dan Energi	Special Topic in Power System and Energy	2
ENEP803008	Perencanaan Sistem Tenaga Listrik	Power System Planning	3
		Subtotal	**8**
	Semester 4	**4rd Semester**	
ENEE804004	Tesis	Thesis	8
ENEE804005	Publikasi Ilmiah	Publication	2
		Subtotal	**10**
		TOTAL	**42**

COMPUTER ENGINEERING AND NETWORKS

	MATA KULIAH	SUBJECT	
	Semester 1	**1st Semester**	
ENEE801001	Matematika Terapan	Applied Mathematics	3
ENCN803007	Rekayasa Perangkat Lunak Berorientasi Objek	Object Oriented based Software Engineering	3
ENCN801001	Arsitektur Komputer Lanjut	Advanced Computer Architectures	3
ENCN801002	Jaringan Informasi Lanjut	Advanced Information Networks	3
		Subtotal	**12**
	Semester 2	**2nd Semester**	
ENEE802002	Metodologi Penelitian	Research Method	3
ENCN802003	Simulasi Jaringan Berbasis Komputer	Computer Based Network Simulation	3
ENCN802004	Komputasi Multimedia	Multimedia Computing	2
ENCN802005	Penginderaan Jauh	Remote Sensing	3
		Subtotal	11

	Semester 3	3rd Semester	
ENCN803006	Keamanan dan Kehandalan pada Jaringan	Network Security and Reliability	3
ENEE803003	Manajemen dan Keekonomian Proyek Teknik	Engineering Economy and Project Management	3
ENCN803008	Sistem Embedded Lanjut	Advanced Embedded Systems	3
		Subtotal	**9**
	Semester 4	**4rd Semester**	
ENEE804004	Tesis	Thesis	8
ENEE804005	Publikasi Ilmiah	Publication	2
		Subtotal	**10**
		TOTAL	**42**

INFORMATION NETWORK SECURITY MANAGEMENT

	MATA KULIAH	**SUBJECT**	
	Semester 1	**1st Semester**	
ENEE801001	Matematika Terapan	Applied Mathematics	3
ENMS801001	Keamanan Jaringan Informasi	Information Network Security	3
ENMS801002	Infrastruktur Jaringan Informasi	Information Network Infrastructure	3
ENEE803003	Manajemen Proyek dan Keekonomian Teknik	Project Management & Engineering Economic	3
		Subtotal	12
	Semester 2	**2nd Semester**	
ENEE802002	Metodologi Penelitian	Research Methodology	3
ENMS802003	Simulasi Jaringan Berbasis Komputer	Computer Based Network Simulation	3
ENMS802004	Manajemen dan Regulasi Keamanan Informasi	Information Security Management and Regulation	3
ENMS802005	Manajemen Risiko Keamanan dan Penanganan Bencana	Security Risk Management & Disaster Recovery	3
		Subtotal	12
	Semester 3	**3rd Semester**	
ENMS803006	Keamanan Aplikasi dan Jaringan Bergerak	Application and Mobile Network Security	4
ENMS803007	Forensik Digital dan Jaringan	Network and Digital Forensic	4
		Subtotal	**8**
	Semester 4	**4rd Semester**	
ENEE804004	Tesis	Thesis	8
ENEE804005	Publikasi Ilmiah	Publication	2
		Subtotal	**10**
		TOTAL	**42**

CURRICULUM OF ELECTRICAL ENGINEERING DEPARTMENT SPECIAL POST-GRADUATE CLASS IN SALEMBA

TELECOMMUNICATIONS MANAGEMENT

	MATA KULIAH	SUBJECT	
	Semester 1	**1st Semester**	
ENEE801001	Matematika Terapan	Applied Mathematics	3
ENMT801001	Teknik Telekomunikasi Modern	Modern Telecommunications Engineering	3
ENMT801002	Manajemen Sistem Telekomunikasi	Management of Telecommunications System	3
ENEE803003	Manajemen dan Keekonomian Proyek Teknik	Engineering Economy and Project Management	3
		Subtotal	**1 2**
	Semester 2	**2nd Semester**	
ENEE802002	Metodologi Penelitian	Research Methodology	3
ENMT802003	Manajemen Strategis	Strategic Management	3
ENMT802004	Regulasi dan Kebijakan Telekomunikasi	Telecommunications Policy and Regulation	2
ENMT802005	Topik Khusus Teknologi Informasi dan Komunikasi	Special Topic in ICT (Information and Communications Technology)	2
ENMT802006	Kapita Selekta	Capita Selecta	2
		Subtotal	**12**
	Semester 3	**3rd Semester**	
ENMT803007	Komunikasi Multimedia Nirkabel	Multimedia Wireless Communications	2
ENMT803008	Inovasi dan Daya Saing Teknologi	Technological Innovation and Competitiveness	3
ENMT803009	Teknologi Jaringan Masa Depan	Future Network Technology	3
		Subtotal	**8**
	Semester 4	**4rd Semester**	
ENEE804004	Tesis	Thesis	8
ENEE804005	Publikasi Ilmiah	Scientific Publication	2
		Subtotal	**10**
		TOTAL	**42**

ENERGY MANAGEMENT AND KETENAGALISTRIKAN

	MATA KULIAH	SUBJECT	
	Semester 1	**1st Semester**	
ENEE801001	Matematika Terapan	Applied Mathematics	3
ENEE801001	Manajemen dan Keekonomian Proyek Teknik	Engineering Economy and Project Management	3
ENME801001	Operasi dan Kendali Pembangkit Tenaga Listrik	Control and Operation of Power Generation Plant	3
ENME801002	Ekonomi Pengusahaan Pembangkitan Tenaga Listrik	Electric Utility Power Generation Economics	3

		Subtotal	**12**
	Semester 2	**2nd Semester**	
ENEE802002	Metodologi Penelitian	Research Methodology	3
ENME802003	Sistem Dinamik dan Pemodelan	Dynamic Systems and Modeling	3
ENME802004	Manajemen dan Ekonomi Energi	Economics Energy and Management	3
ENME802005	Manajemen Strategis dan Resiko	Strategic Management and Risk	3
		Subtotal	12
	Semester 3	**3rd Semester**	
ENME803006	Kualitas Daya Sistem Tenaga Listrik	Electrical Power System Quality	2
ENME803007	Perencanaan Sistem Tenaga Listrik	Electric Power System Planning	3
ENME803008	Energi dan Lingkungan	Energy and Environment	3
		Subtotal	**8**
	Semester 4	**4rd Semester**	
ENEE804004	Tesis	Thesis	8
ENEE804005	Publikasi Ilmiah	Scientific Publication	2
		Subtotal	**10**
		TOTAL	**42**

6.4. MASTER PROGRAM IN METALLURGY AND MATERIALS ENGINEERING

Program Specification

1	**Degree Awarding Institution**		Universitas Indonesia Double degree : Universitas Indonesia & partner universities
2	**Organizing Institution**		Universitas Indonesia Double degree : Universitas Indonesia & partner universities
3	**Name of Study Program**		Graduate Program in Metallurgy and Materials Engineering
4	**Type of class**		Regular, Special
5	**Awarding Degree**		Magister Teknik (M.T.) Double Degree: Magister Teknik (M.T.) dan Master of Engineering (M.Eng.)
6	**Grade of Accreditation**		BAN-PT: "A" Grade AUN-QA: Accredited
7	**Literate Language**		Bahasa (Indonesia) and English
8	**Scheme of Learning (Full-time / Part-time)**		Full-time
9	**Study requirements**		Bachelor Graduate (S1) / equivalent
10	**Term of Study**		Programmed for 2 years
	Type of Semester	Number of semester	Number of weeks /semester
	Regular	4	17
	Short (optional)	1	8
11	**Specialization:** Materials Specialization Corrosion Specialization		
12	**Graduate profile:** Master graduate is able to integrate and manage the research and science, also providing problem solving in the field of metallurgy and materials engineering according the profesional ethic.		
13	**List of Competence Graduates:** 1. Able to develop advance knowledge and engineering principles in the field of etallurgy and materials engineering. 2. Able to implement the knowledge in the profesional practice 3. Able to integrate the knowledge and providing alternative solution to the recent problem in the field of metallurgy and materials through interdisplinary and multidisplinary approach. 4. Able to manage the research and development in the field of metallurgy and materials which recognized in national and international level 5. Able to analyze mechanical material in engineering design which prevent the material failure. 6. Able to integrate the knowledge and providing alternative solution in the field of manufacture, welding and composite. 7. Able to analyze corrosion principle for the pevention of material degradation in different environment. 8. Able to integrate the knowledge and providing alternative solution in the field of corrosion, coating, inhibition and cathodic protection.		
14	**Course Composition**		
No	Types of Courses	(SKS)	Percentage
i	Compulsory Courses	33	75 %
ii	Elective Courses	3	7 %
iii	Seminar and Thesis	8	18 %
		44	100 %
14	**Total Credits to Graduate**		**44 SKS**

With the increasing development of technology-based industrial materials, the Department of Metallurgical Engineering & Material continuously seek to improve the curriculum in accordance with technological developments. Metallurgy and Materials engineering is a discipline that studies the production, characterization, materials selection and engineering design (engineering materials). Functionally, the role of a master engineering such as designing new materials / modification, develop new manufacturing processes / modifications, material selection, structural characterization (nano, micro and macro) and properties of the material and analyzing the event of a failure in its use.

Master's program curriculum in the field of metallurgical engineering and materials designed to provide opportunities for learners are able to design, select and develop metallurgical processes and material technology, new materials characterization / modifications and be able to control the damage / degradation of material due to media and the environment through corrosion protection techniques and material selection. To that end, the curriculum syllabus 2012 master program FTUI metallurgical engineering and materials designed for 2 (two) types of specialization are:

1. Specialisation of Materials (Materials)
2. Specialisation Corrosion (Corrosion)

COURSE STRUCTURE MASTER METALLURGY & MATERIALS ENGINEERING

Kode MK 2016	Mata Kuliah	Subject	SKS			
			Kekhususan / Major		Fast Track	
	Semester 1	1st Semester	Manu-faktur	Ko-rosi	Manu-faktur	Ko-rosi
ENMT 8 0 1 001	Kinetika & Transformasi Fasa	Kinetics & Phase Transfor-mation	3	3		
ENMT 8 0 1 002	Material Teknik	Engineering Materials	2	2		
ENMT 8 0 1 003	Metode Penelitian & Komputasi	Research & Computational Methods	3	3		
ENMT 8 0 1 104	Mekanika Material	Mechanics of Materials	3		3	
ENMT 8 0 1 205	Prinsip Korosi	Principles of Corrosion		3		3
		Sub Total	**11**	**11**	**3**	**3**
	Semester 2	**2nd Semester**				
ENMT 8 0 2 006	Disain & Pemilihan Material	Design & Selection of Materials	3	3		
ENMT 8 0 2 007	Karakterisasi Material	Material Characterization	3	3	3	3
ENMT 8 0 2 008	Praktikum Karakterisasi Material	Material Characterization Laboratory	1	1	1	1
ENMT 8 0 2 109	Manufaktur Lanjut	Advanced Manufacture	3		3	
ENMT 8 0 2 210	Korosi Lanjut	Advanced Corrosion		3		3
ENMT 8 0 2 211	Pelapisan & Inhibisi	Coating & Inhibition of Materials		3		3
	Pilihan	Elective	3			
		Sub Total	**13**	**13**	**7**	**10**
	Semester 3	**3rd Semester**				
ENMT 8 0 3 012	Analisa Kerusakan & Lab.	Failure Analysis + Labora-tory	4	4		
ENMT 8 0 3 113	Metalurgi Las	Welding Metallurgy	3		3	
ENMT 8 0 3 114	Komposit Lanjut	Advanced Composites	3		3	
ENMT 8 0 3 215	Proteksi Katodik	Cathodic Protection		3		3
	Pilihan	Elective		3		
		Sub Total	**10**	**10**	**6**	**3**
	Semester 4	**4th Semester**				
ENMT 8 0 0 016	Makalah Penelitian	Research Journal	2	2	2	2
ENMT 8 0 0 017	Seminar Proposal Tesis	Seminar of Thesis Proposal	2	2	2	2
ENMT 8 0 0 018	Tesis	Thesis	6	6	6	6
		Sub Total	**10**	**10**	**10**	**10**
		TOTAL	**44**	**44**	**26**	**26**

ELECTIVES

KODE	MATA AJAR	SUBJECT	SKS
ENMT 8 0 3 919	Manajemen Proyek	Project Management	3
ENMT 8 0 3 920	Material Elektronik	Electronic Material	3
ENMT 8 0 3 921	Material Turunan Polimer	Polymer Derivative Materials	3
ENMT 8 0 3 922	RBI & Integrity	RBI & Integrity	3
ENMT 8 0 4 923	Manufaktur Lanjut Polimer	Advanced Polymer Manufacture	3
ENMT 8 0 4 924	Metalurgi Ekstraksi Lanjut	Advanced Extractive Metallurgy	3
ENMT 8 0 4 925	Rekayasa Permukaan Material Lanjut	Advanced Surface Treatment	3
ENMT 8 0 4 926	Teknologi Manufaktur Polimer	Polymer Manufacture Tehcnology	3
ENMT 8 0 4 927	Teknologi Nano	Nano Technology	3

6.5. MASTER PROGRAM IN ARCHITECTURE

Program Specification

1	Awarding Institution		Universitas Indonesia
2	Teaching Instituion		Universitas Indonesia
3	Program		Master Prorgram in Architecture
4	Class		Regular
5	Degree Offered		Magister Arsitektur (M.Ars)
6	Accreditation / Recognition		A Accredited from BAN PT; AUN-QA
7	Language of Instruction		Bahasa Indonesia and English
8	Study Scheme (Full time/Part time)		Full time
9	Entry requirement		S1 Graduate/equivalent
10	Duration of Study		2 years-Program
	Type of Semester	Number of semester	Number of weeks /semester
	Regular	8	17
	Short (optional)		
11	**Graduates profile:** Magister Arsitektur is a graduate who achieve mastery of architectural knowledge within their fields and demonstrate the novelty and state of the art in research and innovation in research and design methods.		
12	**Graduates Competence:** 1. Able to construct advanced architectural knowledge within particular fields. 2. Able to manage independent research in architecture within particular fields. 3. Able to synthesize and integrate knowledge and methods to reveal architectural phenomena and to solve architectural design problems. 4. Able to demonstrate critical attitude in individual position in relation to other people and as a part of the society, through attitudes and thinking skills that support successful contribution in the society, teamwork and responsive acts toward the surrounding environment.		

13	**Course Composition**		
No	Type of Courses	Credits	Percentage
i	Architecture Subjects	13	32.5%
ii	Fields Subjects	13	32.5%
iii	Electives	6	15%
iv	Thesis	8	20%
	Total	40	100 %
14	**Total Credits for Graduation**		**40 credits**

Job Opportunity

Job opportunities to the alumnus of Master of Architecture program are: architecture practitioner, academician, researcher, government consultant, businessmen, and actuator in humanities environment sector.

COURSE STRUCTURE MASTER PROGRAM ARCHITECTURE

Kode	Mata Ajar	Subjects	Peminatan					
			AD	UD	UHS	P	ATH	AS
Semester 1								
ENAR801001	Metode Perancangan Lanjut dan Penelitian	Advanced Design and Research Methods	4	4	4	4	4	4
ENAR801002	Teori Arsitektur Lanjut	Advanced Architectural Theories	3	3	3	3	3	3
ENAR801106	Studio Perancangan Arsitektur 1	Architectural Design Studio 1	5					
ENAR801209	Studio Perancangan Perkotaan 1	Urban Design Studio 1		5				
ENAR801312	Studio Perumahan dan Permukiman Perkotaan 1	Urban Housing and Settlement Studio 1			5			
ENAR801415	Workshop Properti 1	Property Workshop 1				5		
ENAR801518	Workshop Sejarah dan Teori Arsitektur 1	History and Theory Workshop 1					5	
ENAR801621	Workshop Arsitektur dan Keberlanjutan 1	Architecture and Sustainability Workshop 1						5
		Sub Total	**12**	**12**	**12**	**12**	**12**	**12**
Semester 2								
ENAR802107	Teori Perancangan Arsitektur	Architectural Design Theories	3					
ENAR802210	Teori Perancangan Perkotaan	Urban Design Theories		3				
ENAR802313	Teori Perumahan dan Permukiman Perkotaan	Urban Housing and Settlement Theories			3			
ENAR802416	Teori Properti	Property Theories				3		
ENAR802519	Teori dan Sejarah Arsitektur	Architectural Theory and History					3	
ENAR802622	Workshop Arsitektur dan Keberlanjutan 1	Architecture and Sustainability Workshop 1						3
ENAR802108	Studio Perancangan Arsitektur 2	Architectural Design Studio 2	5					
ENAR802211	Studio Perancangan Perkotaan 2	Urban Design Studio 2		5				
ENAR802314	Studio Perumahan dan Permukiman Perkotaan 2	Urban Housing and Settlement Studio 2			5			
ENAR802417	Workshop Properti 2	Property Workshop 2				5		
ENAR802520	Workshop Sejarah dan Teori Arsitektur 2	History and Theory Workshop 2					5	
ENAR802623	Workshop Arsitektur dan Keberlanjutan 2	Architecture and Sustainability Workshop 2						5
	Pilihan	Elective	3	3	3	3	3	3
		Sub Total	**11**	**11**	**11**	**11**	**11**	**11**

Semester 3								
ENAR800003	Pra Tesis	Pre-Thesis	4	4	4	4	4	4
	Pilihan	Elective	3	3	3	3	3	3
		Sub Total	**7**	**7**	**7**	**7**	**7**	**7**
Semester 4								
ENAR800004	Publikasi Ilmiah	Scientific Publication	2	2	2	2	2	2
ENAR800005	Tesis	Thesis	8	8	8	8	8	8
		Sub Total	**10**	**10**	**10**	**10**	**10**	**10**
		Total	**40**	**40**	**40**	**40**	**40**	**40**

Bidang Peminatan - Stream:
AD = Architectural Design (Perancangan Arsitektur)
UD = Urban Design (Perancangan Perkotaan)
UHS = Urban Housing and Settlement (Perumahan dan Permukiman Perkotaan)
P = Property (Properti)
ATH = Architectural Theory and History (Teori dan Sejarah Arsitektur)
AS = Architecture and Sustainability (Arsitektur dan Sustainabilitas)

ELECTIVES

Kode	Mata Kuliah	Elective Course	Credit
ENAR800524	Arsitektur Etnik	Ethnic Architecture	3
ENAR800525	Arsitektur dan Ruang Sinematik	Architecture and Cinematic Space	3
ENAR800526	Arsitektur dan Teks	Architecture and Text	3
ENAR800327	Arsitektur di Kawasan Pesisir	Coastal Architecture	3
ENAR800228	Arsitektur, Kota, dan Kuasa	Architecture, City, and Power	3
ENAR800529	Arsitektur Pusaka	Heritage Architecture	3
ENAR800630	Bangunan Hemat Energi	Energy Efficient Building	3
ENAR800131	Desain Komputasi dan Permodelan Parametrik	Computational Design and Parametric Modelling	3
ENAR800632	Fasad Bangunan Tinggi	High-Rise Building Façades	3
ENAR800133	Geometri dan Arsitektur	Geometry and Architecture	3
ENAR800334	Kebijakan Perumahan	Housing Policy	3
ENAR800135	Keseharian dan Arsitektur	Everyday and Architecture	3
ENAR800636	Manajemen Proyek	Project Management	3
ENAR800337	Memahami Fenomena: Plato sampai dengan Derrida	Understanding Phenomenon: Plato to Derrida	3
ENAR800238	Perencanaan Kota	City Planning	3
ENAR800039	Kajian Mandiri	Independent Study	3
ENAR800040	Kapita Selekta	Capita Selecta	3
ENAR800041	Topik Khusus Perancangan Arsitektur	Special Topic on Architectural Design	3
ENAR800042	Topik Khusus Perancangan Perkotaan	Special Topic on Urban Design	3
ENAR800043	Topik Khusus Perumahan dan Permukiman Perkotaan	Special Topic on Urban Housing and Settlement	3
ENAR800044	Topik Khusus Properti	Special Topic on Property	3

ENAR800045	Topik Khusus Sejarah, Teori dan Kritik Arsitektur	Special Topic on Architectural History, Theory and Criticism	3
ENAR800046	Topik Khusus Sustainabilitas	Special Topic on Sustainability	3
ENAR800047	Teaching Assistantship	Teaching Assistantship	3

CURRICULUM STRUCTURE FAST TRACK

Mata Ajar	sks	Mata Ajar	sks
Semester 7		Semester 1	
Mata Ajar Pilihan S1: Metode Perancangan Lanjut dan Penelitian	4	Mata Ajar Wajib S2: Metode Perancangan Lanjut dan Penelitian	4
Mata Ajar Pilihan S1: Teori Arsitektur Lanjut	3	Mata Ajar Wajib S2: Teori Arsitektur Lanjut	3
Mata Ajar Pilihan S1			
(diambil dari Mata Ajar Pilihan S2)	3	Mata Ajar Pilihan S2	3
		Sub Total	10
Semester 8		Semester 2	
Mata Ajar Pilihan S1: Teori Kekhususan	3	Mata Ajar Wajib S2: Teori Kekhususan	3
Mata Ajar Pilihan S1 (diambil dari Mata Ajar Pilihan S2)	3	Mata Ajar Pilihan S2	3
		Studio/Workshop Kekhususan 2	5
		Sub Total	11
		Semester 3	
		Studio/Workshop Kekhususan 1	5
		Pra-Tesis	4
		Sub Total	9
		Semester 4	
		Tesis	8
		Publikasi Ilmiah	2
		Sub Total	10
Total sks Transfer Kredit	16 (40%)	Total sks S2	40

6.5. MASTER PROGRAM IN CHEMICAL ENGINEERING

Program Specification

1	Awarding institution		Universitas Indonesia
2	Organized Instituion		Universitas Indonesia
3	Study Program Name		Chemical Engineering Master Program
4	Type of Class		Regular / Gas Management
5	Degree given		Magister Teknik (MT)
6	Accreditation status		BAN-PT: Akreditasi A
7	Medium Language		Indonesia
8	Study Scheme (Full time/Part time)		Full time
9	Entry requirement		Bachelor Degree
10	Study Duration		Designated for 2 years
11.	Type of Semester	Number of semester	Number of weeks /semester
	Regular	4	17
	Short (optional)	-	-
12	**Graduate Profile:** Master of Chemical Engineering, Faculty of Engineering, Universitas Indonesia who is able to do problem-solving in chemical engineering field through system process design and independent research activities based on scientific principles as well as able to develop professional performance as indicated by keenness of problem analysis, multifariousness aspects, and linearity in troubleshooting.		
13	**Expected learning outcome:** 1. Able to analyze problems in transport phenomena in Chemical Engineering field. 2. Able to analyze problems in thermodynamics in Chemical Engineering field 3. Able to analyze problems in chemical reaction engineering in Chemical Engineering field 4. Able to analyze problems in chemical process system in Chemical Engineering field 5. Able to manage research activities independently based on scientific principles in certain specific fields. 6. Able to design process system as well as related product in chemical engineering fields by considering engineering principles, management, economy, social, health, safety, and environment. 7. Able to prepare scientific articles in chemical engineering field and published in national or international media standards. 8. Continously develop one-self to contribute in solving problems locally as well as globally.		
13	**Classification of Subjects**		
No	Classification	Credit Hours (SKS)	Percentage
i	Total compulsary credits	17	40%
ii	Total elective credits	15	36%
iii	Seminar and Thesis	10	24%
	Total	42	100%
14	**Total Credit Hours to Graduate**		**42 SKS**

CURRICULUM STRUCTURE MASTER PROGRAM CHEMICAL ENGINEERING

Teknik Kimia Reguler asal S1 Teknik Kimia - Chemical Engineering (Regular) Based on Chemical Engineering Undergraduate Program

KODE	MATA AJARAN	SUBJECT	CRED-IT
CODE	**Semester 1**	**Term 2**	
ENCE801001	Pemodelan Teknik Kimia Lanjut	Advanced Chemical Engineering Modelling	3
ENCE801002	Termodinamika Teknik Kimia Lanjut	Advanced Chemical Engineering Thermo-dynamics	3
	Pilihan 1	Elective 1	3
	Pilihan 2	Elective 2	3
	Total SKS	**Total**	**12**
	Semester 2	**Term 2**	**SKS**
ENCE802001	Peristiwa Perpindahan Lanjut	Advanced Transport Phenomena	3
ENCE802002	Teknik Reaksi Kimia Lanjut	Advanced Chemical Reaction Egineeering	3
ENCE800001	Metodologi Penelitian	Research Methodology	3
	Pilihan 3	Elective 3	3
	Total SKS	**Total**	**12**
	Semester 3	**Term 3**	**SKS**
ENCE800002	Seminar	Seminar	3
	Pilihan 4	Elective 4	3
	Pilihan 5	Elective 5	3
	Total SKS	**Total**	**9**
	Semester 4	**Term 4**	**SKS**
ENCE800003	Tesis	Thesis	7
ENCE800004	Publikasi Ilmiah	Scientific Publications	2
	Total SKS	**Total**	**9**
	Total SKS 4 semester	**Sub Total**	**42**

Teknik Kimia Reguler asal S1 non-Teknik Kimia - Chemical Engineering (Regular) Based on non-Chemical Engineering Undergraduate Program

KODE	MATA AJARAN	SUBJECT	CREDIT
CODE	**Semester 1**	**Term 1**	
Matrikulasi	Peristiwa Perpindahan	Transport Phenomena	3
Matrikulasi	Teknik Reaksi Kimia 1	Chemical Reaction Engineering 1	3
	Pilihan	Elective	3
	Total SKS	**Total**	**9**
	Semester 2	**Term 2**	
Matrikulasi	Termodinamika Teknik Kimia	Chemical Engineering Thermodynamics	4
Matrikulasi	Komputasi Numerik	Numerical Computation	3
ENCE802001	Peristiwa Perpindahan Lanjut	Advanced Transport Phenomena	3
ENCE802002	Teknik Reaksi Kimia Lanjut	Advanced Chemical Reaction Egineeering	3
	Total SKS	**Total**	**13**
	Semester 3	**Term 3**	
ENCE801001	Pemodelan Teknik Kimia Lanjut	Advanced Chemical Engineering Model-ling	3
ENCE801002	Termodinamika Teknik Kimia Lanjut	Advanced Chemical Engineering Thermo-dynamics	3
ENCE800001	Metodologi Penelitian	Research Methodology	3

ENCE800002	Seminar	Seminar	3
	Total SKS	**Total**	**12**
	Semester 4	**Term 4**	
ENCE800003	Tesis	Thesis	7
ENCE800004	Publikasi Ilmiah	Scientific Publications	2
	Total SKS	**Total**	**9**
	Total SKS 4 semester	**Sub Total**	**43**

Managemen Gas - Gas Management

KODE	MATA AJARAN	SUBJECT	CREDIT
CODE	**Semester 1**	**Term 1**	
ENGM801003	Eksplorasi dan Produksi Hidrokarbon	Hydrocarbon Exploration and Processing	3
ENGM801002	Pengolahan Gas Bumi	Natural Gas Processing	3
ENGM801004	Manajemen Proyek Gas Bumi	Natural Gas Project Management	3
ENGM801001	Termodinamika Teknik Kimia Lanjut	Advanced Chemical Engineering Thermodynamics	3
	Total SKS	**Total**	**12**
	Semester 2	**Term 2**	
ENGM802002	Keekonomian Gas Bumi	Natural Gas Economics	3
ENGM802001	Transportasi & Pemanfaatan Gas-Bumi	Natural Gas Transportation and Utilization	3
ENGM802003	Manajemen Resiko	Risk Management	3
ENGM802004	Manajemen Sistem Rekayasa	Engineering System Management	3
	Total SKS	**Total**	**12**
	Semester 3	**Term 3**	
ENGM803001	Energi Berkelanjutan	Suistanable Energy	3
ENGM800001	Metodologi Penelitian dan Seminar	Research Methodology and Seminar	3
ENGM803002	K3 dalam Industri Gas Bumi	Health and Safety in Natural Gas Industry	3
	Total SKS	**Total**	**9**
	Semester 4	**Term 4**	
ENGM800002	Tesis	Thesis	7
ENGM800003	Publikasi Ilmiah	Scientific Publications	2
	Total SKS	**Total**	**9**
	Total SKS 4 semester	**Sub Total**	**42**

MATA KULIAH PILIHAN / ELECTIVE COURSE

Kode	Mata Kuliah Pilihan Ganjil	Elective Course for Odd Semester	Credit
ENCE803101	Industri Oleokimia	Oleochemical Industry	3
ENCE801101	Teknologi Pangan	Food Technology	3
ENCE803102	Rekayasa Protein	Protein Engineering	3
ENCE801102	Teknologi Herbal	Herbal Technology	3
ENCE801103	Material Komposit	Composite Material	3
ENCE813103	Termodinamika Terapan	Applied Thermodynamics	3
ENCE803104	Sistem Dinamik	Dinamic System	3
ENCE811104	Sifat Termodinamika Hidrokarbon	Thermodynamic System of Hydrocarbon	3

ENCE801105	Teknologi Pelumas	Lubricant Engineering	3
ENCE803105	Teknologi Kriogenik	Cryogenic Engineering	3
ENCE801106	Teknik Pembakaran	Combustion Engineering	3
ENCE803106	Teknologi Plasma dan Ozon	Plasma and Ozone Engineering	3
ENCE801107	Katalisis Heterogen	Heterogeneous Catalyst	3
ENCE801108	Energi Berkelanjutan	Suistanable Energy	3
ENCE803107	Manajemen Resiko	Risk Management	3
ENCE803108	Topik Khusus 1	Special Topic 1	3

Kode	Mata Kuliah Pilihan Genap	Elective Course for Even Semester	Credit
ENCE802101	Teknologi Penyimpanan dan Pengemasan	Packaging and Storage Technology	3
ENCE802102	Bioinformatika	Bioinformatics	3
ENCE802103	Teknologi Obat dan Kosmetik	Drugs and Cosmetics Technology	3
ENCE802104	Biomaterial	Biomaterial	3
ENCE802105	Pengolahan Minyak Bumi	Petroleum Processing	3
ENCE802106	Proses Petrokimia	Petrochemical Processing	3
ENCE802107	Teknologi Fotokatalisis	Photocatalysis Technology	3
ENCE812108	Teknologi Polimer	Polymer Engineering	3
ENCE802109	Pencegahan Pencemaran	Pollution Prevention	3
ENCE802110	Eksplorasi dan Produksi Hidro-karbon	Exploration and Production of Hydrocar-bon	3
ENCE802111	Utilitas dan Pemeliharaan Pabrik	Utilities and Plant Maintenance	3
ENCE802112	Transportasi dan Pemanfaatan Gas Bumi	Natural Gas Transportation and Utiliza-tion	3
ENCE812113	Teknologi Pelepasan Terkendali Obat	Drug Controlled Released Technology	3
ENCE802114	Analisis dan Sintesis Sistem Proses Kimia	Analysis and Synthesis of Chemical Processes	3
ENCE802115	Teknologi Panas Bumi	Geothermal Technology	3
ENCE802116	Kecakapan Pemecahan Masalah	Problem-Solving Skills	3
ENCE802117	Topik Khusus 2	Special Topic 2	3

6.7. MASTER PROGRAM IN INDUSTRIAL ENGINEERING

Program Specification

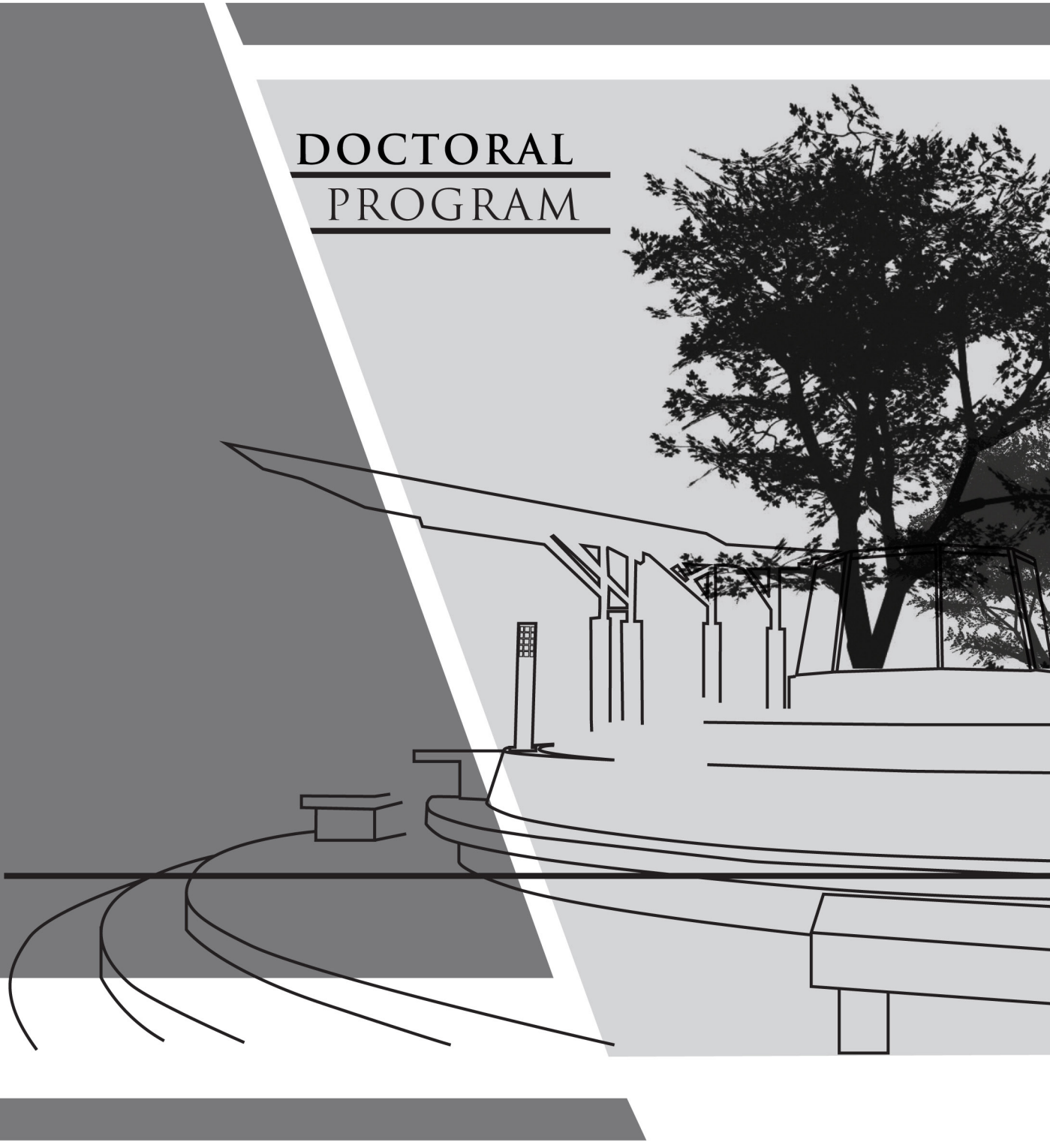
1	**Awarding Institution**		Universitas Indonesia
2	**Teaching Institution**		Universitas Indonesia
3	**Programme Title**		Master Program in Industrial Engineering
4	**Class**		Regular Depok; Special Salemba
5	**Final Award**		Magister Teknik (M.T)
6	**Accreditation / Recognition**		BAN-PT: B - Accredited
7	**Language(s) of Instruction**		Bahasa Indonesia and English
8	**Study Scheme (Full Time / Part Time)**		Full Time
9	**Entry Requirements**		Bachelor (S1) from science and engineering field AND pass the entrance exam
10	**Study Duration**		Designed for 2 years
	Type of Semester	Number of semester	Number of weeks /semester
	Regular	4	17
	Short (optional)	1	8
11	**Graduate Profiles:** *An Industrial engineer who has the capabilities of designing, improving, operating and maintaining integrated and multi-level manufacturing and service systems by analyzing and synthesizing processes within research and scientific framework in order to increase the productivity and quality.*		
	Expected Learning Outcomes: 1. Ability to design and manage researches, and analyse and interpret data. 2. Ability to design, manage and improve a system, component, or process to fulfil the needs within realistic boundary such as economics, environment, social, politics, ethics, health and safety, feasibility, and sustainability. 3. Ability to analyse and synthesize engineering problems by using skills and modern tools. 4. Ability to work professionally with ethical responsibility. 5. Has a broad knowledge to understand the impact of engineering problem solving in a global, economic, environmental and social context. 6. Ability to learn independently and continuously (lifelong learning).		
13	**Classification of Subjects**		
No	Classification	Credit Hours (SKS)	Percentage
i	Compulsory Subjects	18	41%
ii	Stream Subjects	12	27%
iii	Elective Subjects	4	9%
iv	Seminar, Thesis & Publication	10	23%
	Total	44	100 %
14	**Total Credit Hours to Graduate**		**44 SKS**

COURSE STRUCTURE MASTER PROGRAM
INDUSTRIAL ENGINEERING

Course	SKS	Specialization				
		IE Innovation and Ergonomics	SPL Production Systems and Logistics	MI Industrial Management	RDK Data and Quality Engineering	RS System Engineering
1st Semester						
System Thinking	3					
Research Methodology	3					
Operation Management	3					
Industrial System Engineering	3					
2nd Semester						
Advance Operation Research	**3**					
Advance Statistics	**3**					
Specialization Compulsory 1	3	Safety Engineering and Management	Manufacturing System	Industrial Economics	Data Mining	Decision and Risk in System Engineering
Specialization Compulsory 2	3	Industrial Technology Management	Inventory System	Industrial Resource Management	Data Engineering	System Based Analysis
3rd Semester						
Specialization Compulsory 3	3	Product and Service Innovation	Logistics System	Industrial Project Development	Reliability and Quality	System Engineering Management
Specialization Compulsory 4	3	Macro Ergonomics	Transportation System	Industrial Strategic Management	Multivariate Data Analysis	Performance Analysis and Modeling

Specialization Electives 1	2	• Knowledge Management • Cognitive Ergonomics • Technopreneurship • Human Performance Engineering	• Total Quality Management • Lean Manufacturing • Industrial Organization • Maritime Logistics	• Corporate Finance • Enterprise Information System • Maintenance Management • Supply Chain Management	• Decision Uncertainties and Risk • Consumer Relationship Management • Advance Optimization	• Conceptual System Planning • Resource and Logistic Support for System Engineering • Game Theory • Technology Policy Modeling using Dynamic System
Specialization Electives 2	2					
4th Semester						
Thesis	8					
Publication	2					

DOCTORAL PROGRAM



7. DOCTORAL PROGRAM

FTUI holds Doctoral Program for the six following study programs:
1. Civil Engineering
2. Mechanical Engineering
3. Electrical Engineering
4. Metallurgy & Material Engineering
5. Chemical Engineering
6. Architecture
7. Industrial Engineering

FTUI Doctoral program was officially opened in 2000 with the opening of the Civil Engineering and Electrical Engineering Doctoral program followed by the emersion of the Opto-electrotechnique and Laser Application study program into the Postgraduate Program of FTUI. The Mechanical Engineering study program was officially opened in 2006 while the Metallurgy & Material Engineering and Chemical Engineering followed in 2007. And In 2009, respectively Department of Architecture opened the Architecture Doctoral Program. In 2001, the Opto-electrotechnique and Laser Application was closed and was emerged into the Electrical Engineering study program. Each Doctoral study program is headed by the Head of Study Program which is held ex-officio by the Head of Department in the Faculty of Engineering UI. The Doctoral study programs have one or more focus subjects to give a more specific knowledge on engineering field to all students of the program.
Currently, the Doctoral Program is held in two ways: Lecture & Research; and Research.

New Students Selection

Selection process for new students for the FTUI Doctoral Program is as follow:

1. Pre-admission stage: future student is encouraged to informally contact their prospective Promotor or the Head of Department to further discuss his/her desired dissertation topic. This is important to make sure the availability of Promotor in accordance to said research topic. Communication may be done through email or face to face. The Head of Department and future Promotor then would discuss the student's proposal internally.
2. Future student should register online via http://penerimaan.ui.ac.id and complete the required documents and prerequisites.
3. Future student will then take the entrance examination (SIMAK UI) which consists of: (i) Academic Potential Examination and (ii) English Proficiency Test.
4. The results of the Entrance Examination will then be sent to FTUI by the UI Entrance Examination Committee. These results will then be discussed in a Department Committee Meeting headed by the Head of Department to determine which students accepted, and the proposed research topic approved, and the availability of future Promotor. An interview have to be arrange with the future student to determine the suitability of research topic, with previous study field, and the student's commitment to participate in the Doctoral program full time. Interview may be done directly or through email or messanger application.
5. The outcome of the Department Committee Meeting will then be submitted to the UI Entrance Examination Committee to be announced.

Academic Counseling

Since the day a student is registered as student for the Doctoral program until the time that he/she passes qualification examination, the student will be under the guidance of an academic advisor who the student expected to be their Promotor or Co-Promotor. Head of Department accepts a proposal of future Promotor/Academic Advisor from a committee in the Department. Once the student pass the qualification examination, the student will earn status as Doctor Candidate and the Academic Advisor's status will revert to Promotor/Co-Promotor.

Promotor and Co-Promotor

Promotor and Co-Promotor for Doctoral Program are lecturers or experts from related field and are assigned by Head of Department based on a Rector's Decree to guide and advise a Doctor candidate in

conducting research and dissertation writing. Academic Advisor consist of 1 Promotor and a maximum of 2 (two) Co-Promotors. Promotor is a first chair Advisor who holds an academic degree of Professor or Doctor and a minimum of Senior Lecture academic position; has a relevant expertise in the field which the student's dissertation topic is; and is acknowledge as a full time faculty at the Universitas Indonesia, and for the last five years has produced at the latest: one scientific paper in an accredited national journal or a reputable international journal; or one other form of scientific product which is acknowledge by a group of experts set up by the Academic Senate of Universitas Indonesia.

Co-Promotors are the Promotor's companions who act as second and/or third chair advisor who hold academic degree of Doctor or Senior Lecturer, and has a relevant expertise in the field with the student's dissertation topic. Co-Promotor from outside of the Faculty of Engineering UI must have the approval from the Promotor. Promotor and Co-Promotors are appointed by the Rector based on the proposal submitted by the Dean which are also based on suggestions from the Head of Department after the student has pass the qualification examination. The appointment must be done at the latest 1 (one) semester after the qualification examination. A change of Promotor/Co-Promotor must be proposed by the Dean to the Rector based on a proposal from the Head of Department.

Program Specification

1	**Awarding Institution**		Universitas Indonesia
2	**Teaching Institution**		Universitas Indonesia
3	**Programme Title**		Doctoral Program in Civil Engineering Doctoral Program in Mechanical Engineering Doctoral Program in Electrical Engineering Doctoral Program in Metallurgy & Material Engineering Doctoral Program in Chemical Engineering Engineering Doctoral Program in Architecture Doctoral Program in Industrial Engineering
4	**Class**		Regular
5	**Final Award**		Doctor (Dr.)
6	**Accreditation / Recognition**		Civil Engineering Doctoral Program: Accreditation A from BAN-PT Mechanical Engineering Doctoral Program: A Accreditation A from BAN-PT Electrical Engineering Doctoral Program: Accreditation A from BAN-PT Metallurgy & Material Engineering Doctoral Program: Accreditation A from BAN-PT Chemical Engineering Engineering Doctoral Program: Accreditation A from BAN-PT Architecture Doctoral Program: Accreditation B from BAN-PT Industrial Engineering Doctoral Program: On Accreditation Process
7	**Language(s) of Instruction**		Indonesia
8	**Study Scheme (Full Time / Part Time)**		Full Time
9	**Entry Requirements**		Master graduate from study programs in line with study program chosen and pass the entrance examination
10	**Study Duration**		Designed for 3 years
	Type of Semester	Number of semester	Number of weeks /semester
	Regular	6	14 - 17
	Short (optional)	none	none

11	**Streams:** *The Civil Engineering Doctoral Program has six streams as follow:* • *Structure* • *Construction Management* • *Transportation* • *Water Resource Management* • *Project Management* • *Geotechnique* *The Mechanical Engineering Doctoral Program has four streams as follow:* • *Energy Conversion* • *Engineering Design and Product Development* • *Manufacture Engineering* • *Fire Safety Engineering and Management* *The Electrical Engineering Doctoral Program has eight streams as follow:* • *Telecommunication Engineering* • *Electrical Power and Energy Engineering* • *Photonic and Electronic Engineering* • *Control Engineering* • *Multimedia and Information Engineering* • *Security of Information Network Engineering* • *Telecommunication Management* • *Electrical Power and Energy Management* *The Metallurgy & Material Engineering Doctoral Program has two streams as follow:* • *Corrosion and Protection* • *Material Engineering and Manufacture Process* *The Chemical Engineering Doctoral Program has five streams as follow:* • *Industry Catalist* • *Gas Management* • *Product Design and Chemical Process* • *Environmental Protection and Work Safety* • *Gas Technology* *The Industrial Engineering Doctoral Program has two streams as follow:* • *Rekayasa Kualitas Manufaktur* • *Rekayasa Sistem Jasa*
12	**Graduate Profiles:** FTUI Doctoral Program Graduates haves the capabilities of demonstrating expansion, novelty breakthrough in research in the engineering or architecture field in accordance to certain stream or sub-stream. The FTUI Doctoral Program prepares student to work in academic and research in accordance to their own stream; dedicate their expertise in research laboratory, industry or government institution; or create a business based on their innovation. Graduates are able to posess the following skill: • Be able to show expertise in the engineering or architecture discipline; • Be able to uphold the academic and research ethics; • Be able to work collaboratively in research; • Be able to position themselves as leader in their community; • Be able to communicate well in their community and build networks; • Be able to demonstrate individual live skill in connection to human relationship; • Be able to demonstrate attitude, behavior and way of thinking which support their success in society.

13	**Graduates Competence:** The aim of Doctoral Program in FTUI is in line with the Doctoral Program of Universitas Indonesia, to produce quality graduates with the following competence: 1. Able to independently update their knowledge on science and technology in engineering or architecture through research based innovation breakthrough. 2. Able to show professionalism in their field of study that can be accountable towards the development of science and technology. 3. Able to write a scientific paper in engineering or architecture and convey the result of their research to the public both orally or written in an international scientific activity. 4. Able to recommend a solution for a complex problem faced by society in the field of engineering or architecture through inter, multi and trans discipline approach. 5. Able to lead a working or research team to solve problem in the field of engineering or architecture that can be of benefit for the good of mankind. 6. Able to develop and maintain a network of cooperation with fellow researcher and research community in the field of engineering and architecture both in national and international level.
14	**Classification of Subjects. (Course & Research)**

No	Classification	Credit Hours	Percentage
i	Course Component	18	34 %
ii	Research Component	34	66 %
	Total	52	100 %

14	**Classification of Subjects. (Research)**		
No	Classification	Credit Hours	Percentage
i	Course Component	0	0 %
ii	Research Component	52	100 %
	Total	52	100 %
15	**Total Credit Hours to Graduate**		52 CP

Curriculum Structure for FTUI Doctoral Program

The curriculum structure for the Doctoral Program in all study programs are the same, they are only differentiated by their codes for the research component. The code "xx" for each study programs are as follow:
ENCV for Civil Engineering, ENME for Mechanical Engineering, ENEE for Electrical Engineering, ENMT for Metallurgy & Material Engineering, ENAR for Architecture, and ENCH for Chemical Engineering.

The FTUI Doctoral Program is held in two program: Course and Research and Research.

1.1. DOCTORAL PROGRAM (COURSE & RESEARCH)

The following is the curriculum structure for Course & Research Doctoral Program in Table 1.
Table 1. The Curriculum Structure – Doctoral Program in Course and Research

KODE/CODE	MATA AJARAN	SUBJECT	SKS
	Semester 1	**1st Semester**	
ENGE900001	Metode Penelitian Lanjut	Advanced Research Method	6
EN...900001	Kekhususan 1	Special Subject 1	4
		Sub Total	**10**
	Semester 2	**2nd Semester**	
ENGE900002	Analisis Kualitatif & Kuantitatif	Qualitative & Quantitative Analysis	4
ENxx900002	Kekhususan 2	Special Subject 2	4
ENxx900004	Proposal Riset	Research Proposal	6
		Sub Total	**14**
	Semester 3	**3rd Semester**	
ENxx900006	Publikasi – Konferensi Internasional	Publication – International Conference	4
		Sub Total	**4**
	Semester 4	**4th Semester**	
ENxx900007	Ujian Hasil Riset	Research Result Examination	10
		Sub Total	**10**
	Semester 5	**5th Semester**	
ENxx900008	Publikasi II – Jurnal Internasional	Publication II – International Journal	8
		Sub Total	**8**
	Semester 6	**6th Semester**	
ENxx900010	Sidang Promosi	Sidang Promosi	6
		Sub Total	**6**
Total			**52**

The Lecture Component includes four subjects:
a) Advanced Research Method, 6 sks
b) Qualitative and Quantitative Analysis, 4 sks
c) Special Subject I, 4 SKS.
d) Special Subject II, 4 SKS.

The Research Component includes:
1. Research Proposal, 6 SKS
2. Publication – International Conference, 4 SKS

3. Research Result Examination, 10 SKS
4. Publication – International Journal, 8 SKS
5. Promotion Exam, 6 SKS

1.2. DOCTORAL PROGRAM (RESEARCH)

The following is the curriculum structure for Research Doctoral Program in Table 2.

Table 2. The Curriculum Structure – Doctoral Program in Research

KODE/CODE	MATA AJARAN	SUBJECT	SKS
	Semester 1	**1st Semester**	
ENxx900003	Seminar Berkala Kelompok Ilmu	Research Group Periodic Seminar	8
		Sub Total	**8**
	Semester 2	**2nd Semester**	
ENxx900004	Proposal Riset	Research Proposal	6
		Sub Total	**6**
	Semester 3	**3rd Semester**	
ENxx900005	Publikasi I – Konferensi Internasional	Publication I – International Conference	4
		Sub Total	**4**
	Semester 4	**4th Semester**	
ENxx900007	Ujian Hasil Riset	Research Result Examination	10
		Sub Total	**10**
	Semester 5	**5th Semester**	
ENxx900008	Publikasi II – Jurnal Internasional	Publication II – International Journal	8
		Sub Total	**8**
	Semester 6	**6th Semester**	
ENxx900009	Publikasi III – Jurnal Internasional	Publication III – International Conference	8
ENxx900010	Sidang Promosi	Sidang Promosi	6
		Sub Total	**14**
Total			**52**

Description of Subjects

ENGE900001
ADVANCED RESEARCH METHOD
6 SKS
Learning Objective(s): Course participants are expected to: (a) master the scientific work process based on science philosophy, which is the scientific justification aspects, innovative aspects and scientific ethics aspects, (b) able to write a research proposal and or draft of scientific writing related to the student's doctoral topic, (c) can map research result from the latest international journal in their field and understand the state-of-the-art from their research topic, and can determine the knowledge gap yet explored in the international level for further research in their Doctoral Program.
Syllabus: (1) Relationship between philosophy and engineering science; (2) Science Philosophy; (3) Epystemology in Engineering Science; (4) Research Method; (5) Problem formulation and hypothesis; (6) Research and state of the art; (7) Research Evaluation; (8) Design Evaluation and research Stages; (9) Introduction to the analysis of the data processing method; (10) Benchmark on research output and conclusion formulation; (11) Various citation method; (12) Finalization of research proposal draft and / or scientific article draft.
Prerequisite(s): None
Textbooks:
Haryono Imam R dan C. Verhaak, Filsafat Ilmu Pengetahuan, Gramedia, Jakarta, 1995
Willie Tan, "Practical Research Methods", Prentice Hall, 2002.
R. Kumar, *Research Methodology, A Step-by-step Guide for Beginner*, 3rd ed., Sage Pub, 2012

ENGE900002
QUALITATIVE AND QUANTITATIVE ANALYSIS
4 SKS
Learning Objective(s): Discuss the qualitative and quantitative in data analysis and exploring specific data analysis areas. After participating in this subject which discuss the qualitative and quantitative approach in data analysis in exploring specific areas of data analysis. Students are expected to be able to build the following learning outcome: (1) awareness to situations requiring qualitative data analysis in the inductive paradigm; (2) awareness to situations requiring quantitative data analysis in the deductive paradigm; (3) appreciation toward various approaches; (4) possessing skills in giving critical appraisal; (5) possessing skills in performing qualitative and quantitative data analysis.
Syllabus: Introduction; Qualitative Analysis; Quantitative Analysis; Non-Parametric Analysis; Uncertainty Analysis; Critical Appraisal; Design of Experiment; ANOVA revisit; Multivariate Techniques.
Prerequisite(s): None
Textbooks:
Miles M & Huberman M, Qualitative Data Analysis, London Sage Publications, (1994)
Montgomery, D.C., & Runger, G.C, Applied Statistics and Probability for Engineers 3rd Ed., John Wiley and Sons, Inc., New York, (2003)
Kirkup, L, Experimental Method: An Introduction to the Analysis and Presentation, John Wiley and Sons, Australia, Ltd., Queensland, (1994)
Montgomery, D.C, Design and Analysis of Experiments 6th Ed., John Wiley and Sons, Inc., New York, (2005)
Hair, J.F., B.Black, B.Babin and R.E Anderson, Multivariate Data Analysis 6th Ed., Pearson Education Inc., New Jersey, (2006)

ENxx900001
Special Subject 1
4 SKS

ENxx900002
Special Subject 2
4 SKS

Special Subject 1 in the 1st first semester (4 SKS) and Special Subject 2 in the 2nd semester (4 SKS) are determined together with the student's Academic Advisor to support the student's research and/or to develop the student's knowledge with information and knowledge from unrelated field. Academic Advisor is also allowed to propose a special content for the student to Head of Department.
The following are the requirements for the implementation of Special Subject 1 and 2:

For students who do not have in line Master degree educational background from the Faculty of Engineering Universitas Indonesia, they are allowed to take the similar courses of the related field of study available at the Master Program in FTUI during the running semester.

Students are also allowed to take courses from other study programs within the Faculty of Engineering Universitas Indonesia or courses from other faculties in UI as stated in the Guidance Book or the Master/Doctoral Program Catalog.

Students are allowed to take classes in other Master Program in the Faculty of Engineering Universitas Indonesia or other faculties within the Universitas Indonesia as deemed necessary by their Academic Advisor

In the event where neither conditions is viable for the students, the Academic Advisor is allowed to conduct a class of said course.

ENxx900003
Research Group Periodic Seminar
8 SKS

Research Group Periodic Seminar is an early activity of research in the Doctoral Program in Research where students conduct literature study in relation to the materials for their research. This literature study must be done intensively by mapping out the research results from the latest international journals in related field. The final aim was so that students have a state-of-the-art understanding of their research topic, and can determine the knowledge gap previously unexplored in the international level for further research in their Doctoral Program. The result of this literature study is compiled in a literature study report presented in the Research Group Periodic Seminar to be examined by a panel comprises of future Promoter/ Academic Advisor and Examiners from related field of study. Students will passed this Research Group Periodic Seminar if they received a minimum grade of B.

ENxx900004
Research Proposal
6 SKS

Research Proposal is the continuous activity of the literature study, where after gaining a state-of-the-art knowledge of their research topic, students can formulize the scope of their Doctoral research and determine which research method will be use. The result of this activity is a comprehensive research proposal which include: goals, background and data analysis from early study or experiments done. Included in this research proposal is plan of work for each semester and its publication goals. At this level, it is expected for students to begin experiment activity or early study which can show the direction of their research is feasible and recent in his field. The early experiment or study result, the literature study and the whole research plan is then compiled in a Research Proposal Report to be presented and examined in a Research Proposal Examination. Students will passed this Research Proposal if they received a minimum grade of B.

ENxx900007
Research Output Examination
10 SKS

At this stage, students are expected to have a research output with a minimum of 75% from their research plan. Doctorate candidate are expected to have reach a research outcome which is the main part of the originally planned contribution. The outcome of this research is measured through the Research Output Examination. The examination committee is appointed through the Dean's Decree based on the Head of Department's proposal. These examiners consist of experts related in the field of study of the Doctorate candidate with at least one examiner from an institution outside of Universitas Indonesia. Doctor Candidate will passed this Research Output Examination if they received a minimum grade of B. At this stage, a Doctor Candidate are allowed to design a scientific article framework to be published in an indexed International Journal and determine which International Journal they will send the article to.

ENxx900006
Publication - International Conference
4 SKS

ENxx900005
Publication I - International Conference
6 SKS

At this stage, students are expected to have an experiment result or study to focused on in their research topic and clarify their research direction. The result of the experiment must also show innovation or breakthrough, mastery of knowledge on their stream in relation to their research topic, the depth of their research materials, and the mastery of the state of the art development in their field or research interest, originality, and the contribution towards science and/or its implementation. Once presented in front of their promoter and co-promoter, the whole research result at this stage will be deemed worthy for international conference publication.

ENxx900008
Publication II - International Journal
8 SKS

ENxx900009
Publication III - International Journal
8 SKS

The scientific publication is an integral part of research activity and a prerequisite in participating in a Promotion Examination. International Journal meant here is an English language journal which its editorial board consists of member from at least three different countries or more. A mandatory publication must have an "Accepted" status before the Promotion Examination. FTUI itself publish their own international journal, the International Journal of Technology (IJTech), which students can utilize as one of the international journal to publish their Doctoral research.

ENxx900008
Promotion Examination
6 SKS

Before deemed fit to participate in a Promotion Examination. Doctor Candidate are required to conduct additional research as a follow up from the Research Output Examination. The inputs and revisions given during the Research Output Examination must be completed and revised through a series of final research. At this stage, the Doctor Candidate must prove the authencity and originality of their research as new contribution to the scientific world. Thus, at this stage, the Doctor Candidate is required to have an "Accepted" for their international Journal, they are also required to complete their dissertation paper ready to be tested during the Promotion Examination.

Dissertation is an academic scientific paper study output and/or in depth research done independently and contained new contribution to issues that are temporary already known the answer or new questions ask on issues that are seen to have been established in the field of science and technology by the Doctor Candidate under the guidance of his Academic Advisor. A Doctor Candidate that has completed the revision of their dissertation are required to submit a completed version of their dissertation in five hard cover books and original approval form that has been signed by their advisors and submitted to PAF FTUI signifying the end of their study. The format for writing and binding the Dissertation should follow the writing and binding guidelines in the Technical Guidelines of Final Project Writing for Students of

Universitas Indonesia that can be downloaded at http://www.ui.ac.id/download.

Promotion Examination is a scheduled academic activity as a medium of evaluation for the Doctor Candidate Dissertation as a requirement to obtain the highest academic title, Doctor. The requirements and provision for Promotion Examination are as follow:

- Promotion Examination can be done if all the scientific publication requirements are completed by the Doctor Candidate: a minimum of one publication in an International Scientific Journal (in "Accepted" status) in relation to their dissertation research. The Publication is required to state Faculty of Engineering Universitas Indonesia as one of the affiliation institution.
- Promoter and Co-Promoter gave a written approval on the dissertation as a sign that the dissertation can move forward to the Promotion Examination.
- The Promotion Examination is carried out by the Committee of Promotion Examination which is appointed with a Rector's Decree based on a proposal from the Head of Department and the Dean of the Faculty of Engineering Universitas Indonesia.
- The Committee of the Promotion Examination comprises of: (a) Promoter and Co-Promoter, (b) The Examiners, (c) a minimum of one examiner from outside of Universitas Indonesia.
- Examiners consist of experts from related field of study. In a special circumstances, an expert that is not from the academic community can be invited as part of the examiners team.
- The Promotion Examination is led by the Head of the Examiners Committee that is also a member of the committee outside of the Promoter/Co-Promoter and outside examiner. If the Head of the Examiners Committee is unavailable, his/her position can be replaced by one of the member of the examiner team.
- The Promotion Examination is held as an open session for a period of maximum three hours divided into two stages: the dissertation presentation given by the Doctor Candidate for 15-30 minutes and a question and answer session for 120-165 minutes.
- The Doctor Candidate will pass the Promotion Examination if they received a minimum grade of B with GPA 3.00.

Facilities for Doctoral Program Students
To make sure that student of FTUI Doctoral Program are able to conduct full time research and produce excellent publications as required, FTUI provides the following facilities:

Doctoral Program Students' Workstation
Compact cubicles in comfortable rooms are available as Doctoral program students' workstation. The locations for these workstations are located on the 2nd and 3rd floor of the Engineering Center Building. Access to these workstations requires a swipe card to guarantee security. A round the clock wi-fi service is also available. To procure a workstation and access card, students are requested to register to the Associate Dean for General Affairs in the Dean's building, 2nd floor, FTUI Depok.

International Journal Article Writing Training
These free of charge trainings for the FTUI Doctoral program students are held several times each year. The information regarding these trainings are communicated through an announcement in SIAK-NG, posters at each Department, Doctoral program mailing list and FTUI website (www.eng.ui.ac.id).

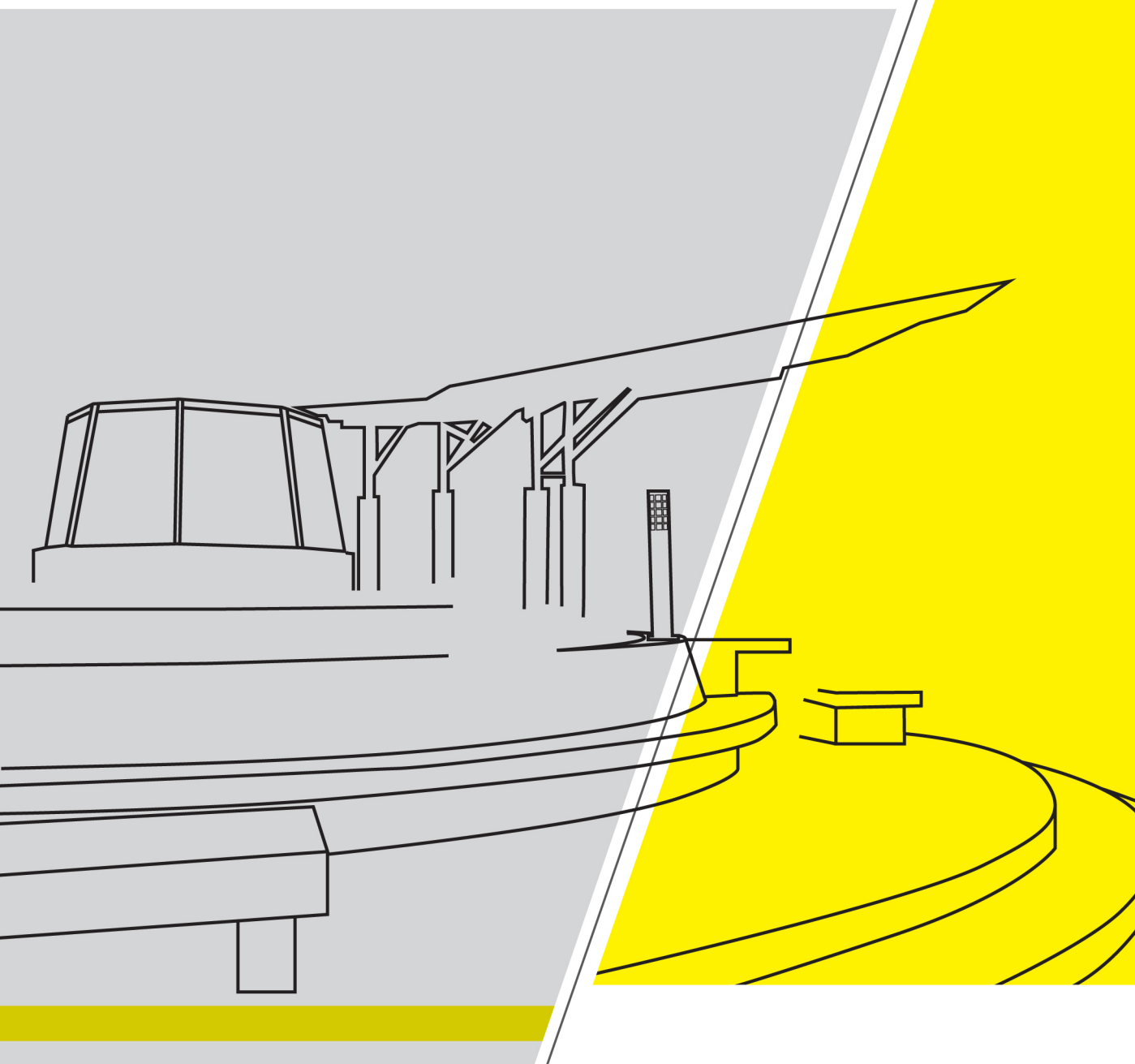
Research Proposal Writing Training
These free of charge trainings for the FTUI Doctoral program students are held several times each year. The information regarding these trainings are communicated through an announcement in SIAK-NG, posters at each Department, Doctoral program mailing list and FTUI website (www.eng.ui.ac.id).

Line Editing Draft for International Journal Article
FTUI provides funds for line editing drafts for International Journal Articles. Requirement for applying for this funds are: the article must include the promoter name as part of the writing team and state FTUI as the main affiliation. To be grant this facility, students only needs to send a draft of their article through email to the FTUI Associate Dean of Academic and Research (risetft@eng.ui.ac.id). The time required for line editing is 2-4 weeks.

Doctoral Program Mailing-List
The Doctoral Program mailing list is used as a communication tool between the Dean's Faculty Heads, the Faculty Center Administration staff and all Doctoral program students in FTUI. Information regarding trainings, seminars, grants or other academic matters is announced through this mailing list. Complaints and suggestions are also accommodated by this mailing list. The mailing list address is: programdoktorft@group.eng.ui.ac.id

Research and Incentive Grants for Master and Doctoral Program
Research funds including consumables and tests for research as part of the thesis and dissertation writing is the responsibility of the student. There are a number of competitive research grants, incentive research grant schemes available from which Master and Doctoral program students may propose to finance his/her research. Complete guidance and research proposal examples are available at the Associate Dean for Research and Community Development secretary at the Dean's Building, 2nd floor or through http://research.eng.ui.ac.id.

International Journal Writing Incentive
This incentives are given to lecturer of State of Private Universities that have published an article in an international journal. Each proposer must be the first writer of the article and include an institution affiliation in Indonesia.



Public Relation Office
PAF Building 1st floor
UI Campus, Depok, 16424

FACULTY OF ENGINEERING
UNIVERSITAS INDONESIA

P: +62 21 78888430
F: +62 21 78888076
E: humas@eng.ui.ac.id