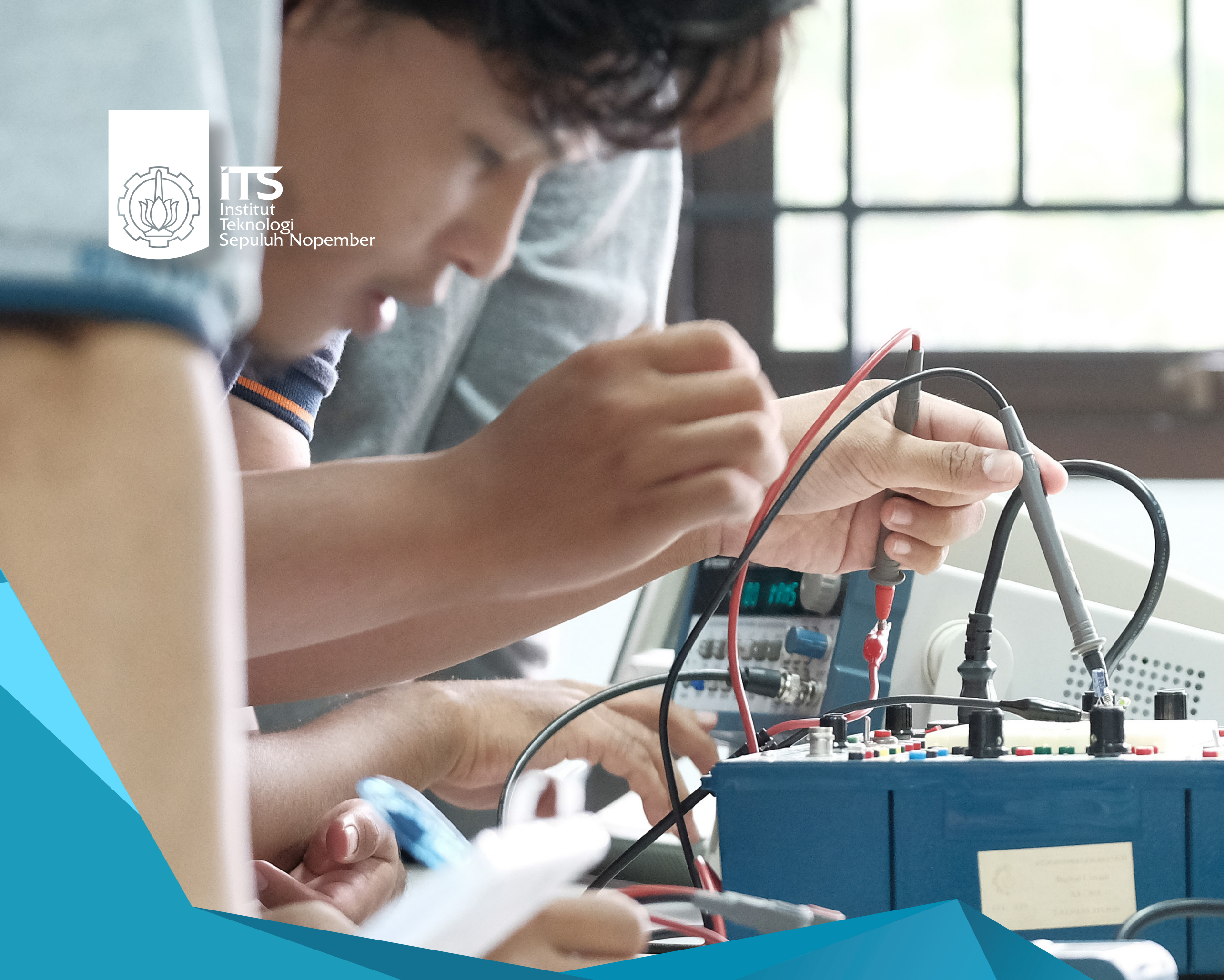
ITS
Institut
Teknologi
Sepuluh Nopember



DEPARTMENT OF **ELECTRICAL ENGINEERING**

Departement Teknik Elektro

Institut Teknologi Sepuluh Nopember (ITS)

* Kegiatan Praktikum

DAFTAR ISI
TABLE OF CONTENT


ASIA
Philippines
BRUNEI
ALAYSIA
INDONESIA
Jakarta
Surabaya
PAPUA
NEW
GUINEA
AUSTRALIA

Prakata

Sebagai kota metropolitan terbesar kedua setelah Jakarta, Surabaya memiliki andil yang besar dalam menopang pembangunan perekeonomian serta menjadi pusat bisnis, perdagangan, dan industri di kawasan Indonesia.

Institut Teknologi Sepuluh Nopember (ITS), merupakan Perguruan Tinggi negeri ternama di wilayah Indonesia. Berlokasi di Surabaya, propinsi Jawa Timur, Indonesia, ITS memiliki 10 fakultas dengan 37 departemen yang menempati area seluas 187 Ha di kampus utama Sukolilo, Kampus Manyar dan Kampus Hos Cokroaminoto.

Departemen Teknik Elektro, dibawah naungan Fakultas Teknologi Elektro. Menempati di 3 gedung utama Fakultas Teknik Elektro yaitu gedung AJ, B, dan C.

Foreword

As the second largest metropolitan city after Jakarta, Surabaya has a large share in sustaining economic development as well as being a business center, trade, and industry in Indonesia.

Institute Technology of Sepuluh Nopember (ITS), is a prominent state university in Indonesia. Located at Surabaya, East Java, Indonesia, ITS has 10 faculties with 37 departments occupying an area of 187 Ha on Sukolilo's main campus, Manyar Campus and Campus Hos Cokroaminoto.

Department of Electrical Engineering, under the auspices of the Faculty of Electrical Technology. Occupy in 3 main building of Faculty of Electrical Engineering namely building of AJ, B, and C.

VISI

Visi Program Studi Sarjana Teknik Elektro (PSS TE-ITS) ITS adalah menjadi lembaga pendidikan tinggi dan penelitian yang unggul berkelas dunia di tahun 2020 dan menjadi ujung tombak dalam proses pengembangan dan pengalihan Ilmu Pengetahuan danTeknologi (IPTek) dalam bidang Teknik Elektro.

VISION

Vision Electrical Engineering Graduate Program (PSS TE-ITS) ITS is a world-class higher education and research institution in 2020 and spearheads in the process of developing and transferring Science and Technology (IPTEK) in Electrical Engineering.

MISI

Misi Program Studi Sarjana TeknikElektro PSS TE-ITS ITS adalah

a. Melaksanakan program pendidikan yang didukung oleh sumber daya yang berkualitas.
b. Melaksanakan sistem pendidikan dan pengajaran bidang teknik elektro yang mengacu pada standar nasional dan internasional.
c. Melaksanakan penelitian, pengembangan,dan penerapan teknik listrik yang berkontribusi terhadap perkembangan ilmu pengetahuan dan teknologi, khususnya di bidang elektronik, energi, telekomunikasi, sistem kontrol, komputasi dan teknologi informasi. Untuk meningkatkan kompetensi staf akademik dan dukungan untuk menjadi profesional dalam tugas-tugas mereka.
d. Melaksanakan pengabdian kepada masyarakat dengan menerapkan hasil penelitian dibidang teknik listrik.
e. Membangun suasana akademik yang kondusif dalam rangka mengembangkan kreativitas dan inovasi dari staf dan siswa
f. Memberikan proses pembelajaran yang berbasis pada kompetensi listrik; untuk melakukan inovatif, berkualitas tinggi, dan penelitian yang berlaku yang relevan dengan kebutuhan nasional dan global.
g. Memainkan peran penting dalam meningkatkan kualitas hidup dan keunggulan kompetitif bangsa, dan mendorong kerjasama dengan lembaga domestik dan internasional.

MISSION

The mission of the Bachelor of Engineering Program Electrical PSS TE-ITS ITS is

a. Carry out educational programs supported by quality resources.
b. Implement educational system and teaching in electrical engineering subject to national and international standard.
c. Carry out research, development, and application of electrical engineering that contribute to the development of science and technology, particularly in the fields of electronics, energy, telecommunications, control systems, computing and information technology. To improve the competence of academic staff and support to become professionals in their duties.
d. Carry out devotion to the community by applying the results of research in electrical engineering.
e. Establish a conducive academic atmosphere in order to develop creativity and innovation from staff and students
f. Providing learning process based on electrical competence; to conduct innovative, high quality, and applicable research relevant to national and global needs.
g. Plays an important role in improving the quality of life and the nation's competitive advantage, and fosters cooperation with domestic and international institutions.

Tentang Departemen Teknik Elektro

Program Studi Sarjana Teknik Elektro ITS yang selanjutnya disebut dengan PSS TE-ITS merupakan salah satu program studi sarjana yang bernaung dibawah Fakultas Teknologi Elektro di Institut Teknologi Sepuluh Nopember. Program studi ini berdiri dengan nomor SK pendirian No. 93367/U.U/1960 tertanggal 3 Nopember 1960 yang ditandatangani oleh Menteri Pendidikan dan Kebudayaan.

Penyelenggaraan PSS TE-ITS berdasar visi untuk menjadi lembaga yang unggul, kompetitif dan berkelas dunia dalam mengembangkan pendidikan, penelitian, dan implementasi IPTEK pada bidang: Teknik Sistem Tenaga, Telekomunikasi Multimedia,

About Department of Electrical Engineering

ITS Electrical Engineering Bachelor Degree Program, hereinafter referred to as PSS TE-ITS is one of the undergraduate study programs under the Faculty of Electrical Technology at Institute Technology of Sepuluh Nopember. The study program was established with the number SK of establishment no. 93367 / U.U / 1960 dated 3 November 1960 signed by the Minister of Education and Culture.

The implementation of PSS TE-ITS is based on the vision to become a superior, competitive and world-class institution in developing science, research and implementation of Science and Technology in the areas of: Power System Engineering,

Elektronika, Sistem Pengaturan, Teknik Komputer dan Telematika. Sedangkan misi dari PSS TE-ITS adalah sebagai lembaga yang menghasilkan karya ilmiah bermanfaat bagi masyarakat dan menghasilkan sumber daya manusia yang memiliki kompetensi dibidang Teknik Elektro dengan karakter: bermoral, mempunyai daya saing tinggi, mampu mengembangkan, meningkatkan, dan memajukan IPTEK, dan mampu memberikan andil pada penerapan IPTEK, serta bermanfaat bagi kepentingan masyarakat.

Multimedia Telecommunication, Electronics, Control System, Computer Engineering and Telematics. While the mission of PSS TE-ITS is as an institution that produces scientific work useful for the community and produce human resources who have competence in the field of Electrical Engineering with the character of: morally, have high competitiveness, able to develop, improve and advance science and technology, contributed to the implementation of science and technology, and beneficial to the interests of society.

* *Kegiatan Praktikum*

Program Studi

Program Studi Sarjana (S1)

Program studi sarjana di Departemen Teknik Elektro ITS ditempuh dalam waktu delapan semester atau empat tahun. Untuk memperoleh gelar sarjana, mahasiswa Departemen Elektro ITS perlu menyelesaikan 144 Satuan Kredit Semester (SKS) selama kuliah dan mengikuti ujian TOEFL dengan nilai minimum 477. Pada semester empat, mahasiswa diwajibkan memilih salah satu bidang studi di Departemen Teknik Elektro, yaitu teknik sistem tenaga, telekomunikasi multimedia, teknik elektronika, studi teknik sistem pengaturan.

Study Programs

Undergraduate Program (S1)

The undergraduate study program in Electrical Engineering Department of ITS is carried out in eight semesters or four years. To earn a bachelor's degree, students of the Department of Electrical Engineering ITS are required to complete 144 credits and pass the examinations. A TOEFL with a minimum score of 477 is also required to obtain the degree. In semester four, students are required to choose one field of study within the Department of Electrical Engineering. Some of the choices include power system engineering, multimedia telecommunications, electrical engineering, and settings engineering systems studies.

Program Studi Magister (S2)

Program studi magister di Departemen Teknik Elektro ITS ditempuh dalam waktu empat semester atau dua tahun dengan beban studi 36 Satuan Kredit Semester (SKS). Program magister Teknik Elektro ITS bertujuan untuk meningkatkan taraf penguasaan ilmu dan kemampuan para pesertanya dalam bidang Teknik Elektro. Mahasiswa diharapkan memiliki kemampuan akademik dan profesional yang dapat dimanfaatkan secara mandiri dalam mengembangkan ilmu dan teknologi elektro di bidang pendidikan, penelitian, dan industri. Program magister di Departemen Teknik Elektro memiliki tujuh peminatan, yaitu teknik sistem tenaga, telekomunikasi multimedia, elektronika, sistem pengaturan,

Master Degree (S2)

The master's degree program in Electrical Engineering Department ITS is carried out four semesters or two years, with a study load of 36 credits. The Master of Electrical Engineering ITS Program aims to improve the level of expertise of science and the ability of the students in the field of Electrical Engineering. Students are expected to have academic and professional skills that can be utilized independently within developing electronic science and technology in education, research, and industry. The master program in the Department of Electrical Engineering has seven specializations. Which include power system engineering, multimedia telecommunications, electronics, regulat

* Kegiatan Praktikum

jaringan cerdas multimedia, telematika, dan telematika untuk pengelola TIK. Bidang minat terakhir dikhususkan bagi mahasiswa program kerja sama dengan Kementerian Komunikasi dan Informatika.

system, intelligent network multimedia, telematics, and telematics for ICT managers. The last field of interest is reserved for students of the cooperation program with the Ministry of Communication and Informatics.

Program Studi Doktoral (S3)

Bagian pokok program studi doktoral di Departemen Teknik Elektro ITS adalah kegiatan penelitian, yang memberikan sumbangan baru bagi pengembangan ilmu pengetahuan dan teknologi di bidang elektro. Lama pendidikan adalah tiga tahun dengan bobot mata kuliah total 40 SKS, terdiri dari 28 SKS mata kuliah kompetensi utama dan 12 SKS kompetensi pendukung. Mata kuliah kompetensi utama meliputi aktivitas disertasi yang mencakup penelitian dan publikasi paling sedikit pada satu jurnal bereputasi atau 2 jurnal internasional bereputasi. Di akhir masa studi, terdapat ujian akhir dalam bentuk seminar dengan mempertahankan disertasi di hadapan dewan penguji. Informasi lebih lanjut dapat diakses

Doctoral Degree (S3)

The main focus of the doctoral program in the Department of Electrical Engineering ITS is mainly on research activities, which provide new contributions to the development of science and technology in the field of Electrical Engineering. The duration of program is three years with a total of 40 credits, consisting of 28 credits of themain courses and 12 credits of supporting courses. The main courses include dissertation activities which includes research and publications at least in a reputable journal or 2 reputable international journals. At the end of the study period, a final exam in the form of a seminar will be held, by presenting the dissertation in front of the board of examiners. Further information can be accessed.

BUDAYA KERJA DAN PENGAJARAN

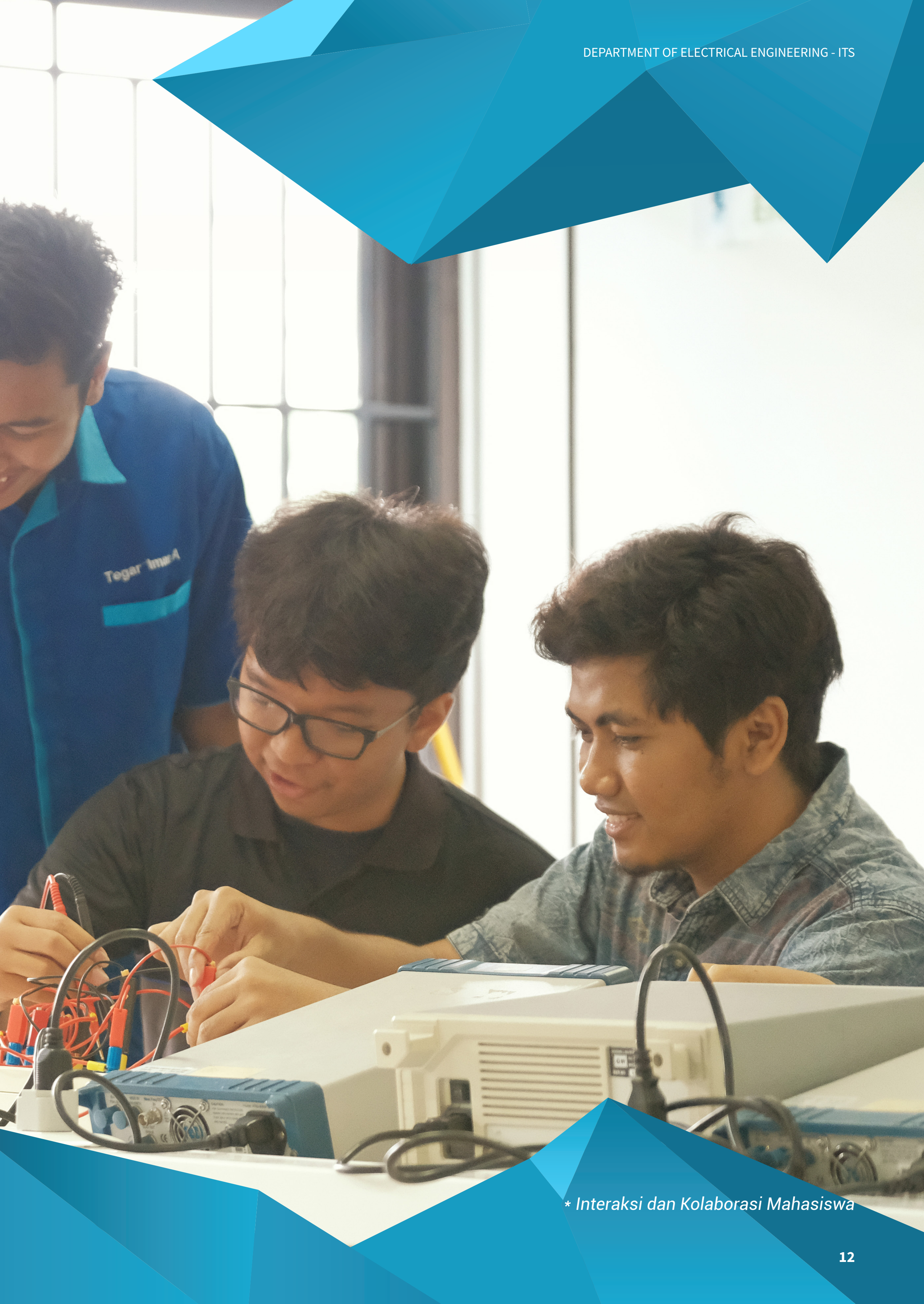
Departemen Teknik Elektro menumbuhkan budaya apresiatif dan kolaborasi. Metode pengajaran menerapkan pendekatan Integrative Educative Approachyang tersusun atas tiga pilar, yaitu

- Intellectual Curiosity Exploration (minat intelektual, pengetahuan)
- Leadership and Technopreneurship (kepemimpinan, skill organisasi dan bisnis)
- Character development (sikap, mental)

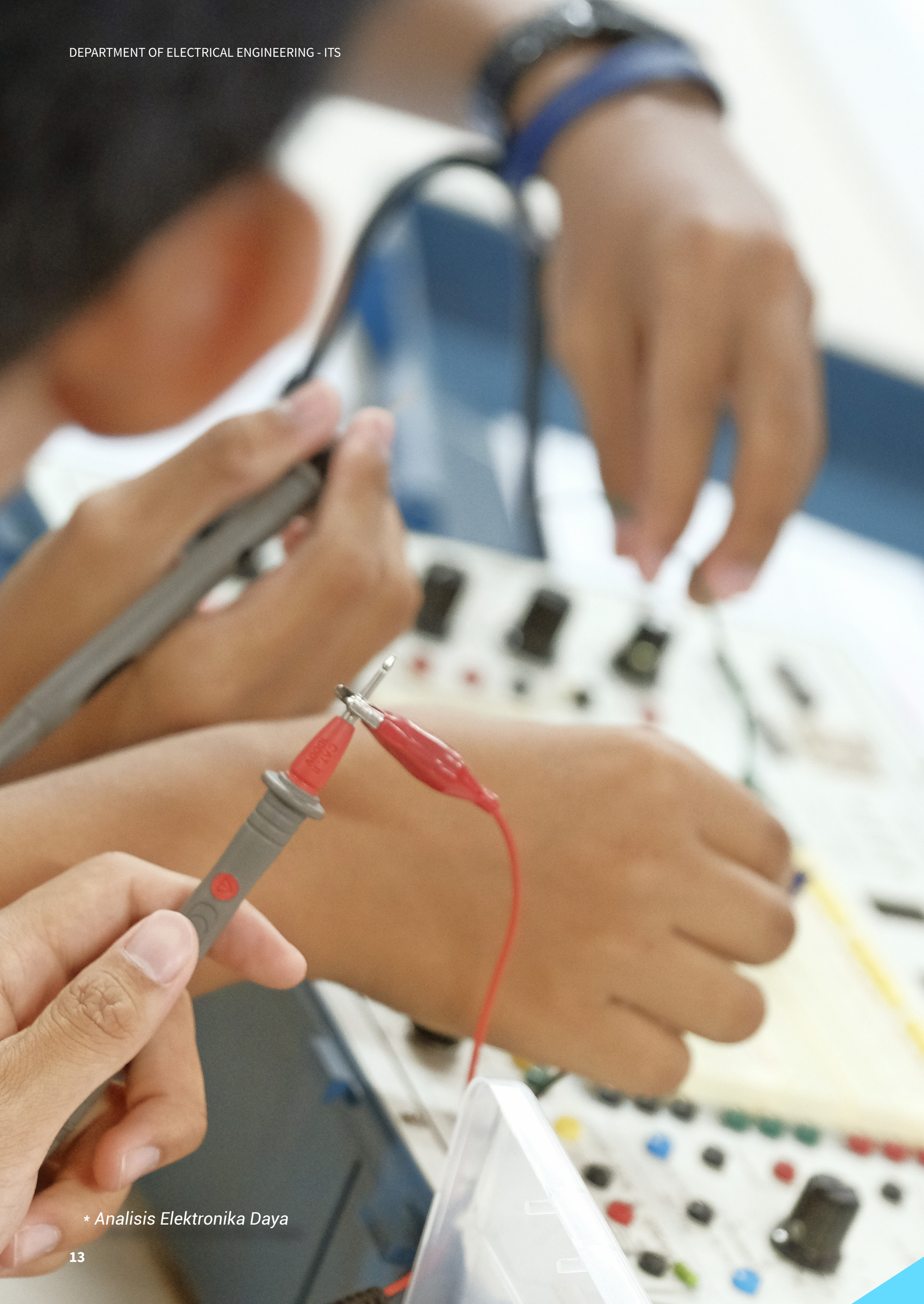
CULTURAL WORK AND LESSON

The Department of Electrical Engineering cultivates an appreciative culture and collaboration. The teaching method applies the Integrative Educative Approach approach consisting of three pillars:

- *Intellectual Curiosity Exploration* (Intellectual *interest, knowledge)*
- *Leadership and Technopreneurship (leadership, organizational and business skills)*
- *Character development (attitude, mental)*



* Interaksi dan Kolaborasi Mahasiswa



* *Analisis Elektronika Daya*

KURIKULUM

Kurikulum Departemen Teknik Elektro terdiri dari 144 sks yang didistribusikan dalam 8 semester. Program Sarjana dibagi dalam tahap persiapan dan tahap sarjana. Pada tahap persiapan, mahasiswa harus menyelesaikan 36 sks dalam 2 semester sedangkan tahap sarjana membutuhkan 108 sks dalam 6 semester.

Pada tahap persiapan, program ini berfokus pada pengembangan keterampilan dan pengetahuan umum. Kemampuan soft skill juga diasah dengan mempersiapkan dan melengkapi mahasiswa tahun pertama melalui pembelajaran sikap dan etika. Keterampilan umum dan pengetahuan mahasiswa diperkuat dengan menyelesaikan 96 sks wajib.

Sementara keterampilan dan pengetahuan khusus siswa diperoleh dengan menyelesaikan 48 SKS lainnya (mata kuliah wajib dan pilihan). Mata kuliah pilhan terdiri dari keahlian dan pengetahuan khusus pada Elektronika, Teknik Komunikasi dan Multimedia, Teknik Sistem Tenaga, dan Sistem Pengaturan.

CURRICULUM

The curriculum of the Electrical Engineering Department of 144 credits is distributed in 8 semesters. Undergraduate programs are divided into preparatory and undergraduate stages. At the preparatory stage, students must complete 36 credits in 2 semesters while the bachelor stage requires 108 credits in 6 semesters.

At the preparatory stage, the program focuses on developing general skills and knowledge. The ability of soft skill is also honed by preparing and equipping first year students through attitude and ethics learning. General skills and student knowledge are strengthened by completing the required 96 credits.

While the skills and special knowledge of students are obtained by completing another 48 credits (compulsory and elective courses). The pilhan course consists of specialized skills and knowledge in Electronics, Communication and Multimedia Techniques, Power Systems Engineering, and Systems Management.

* *Gedung Departemen Teknik Elektro*

Year	Course	Credit	Level of Study
1st Year	3 Non-Technical Common University Courses 4 Technical Common Courses 7 Compulsory Department Courses	36	Basic Science and Knowledge
2nd Year	2 Technical Common Courses 11 Compulsory Department Courses	40	Basic science of Electrical Engineering
3rd Year	3 Compulsory Department Courses 8 Compulsory CA Courses 1 Elective CA Course Job Training	39	Science, Skill and Knowledge Enrichment
4th Year	2 Non-Technical Common University Courses 1 Compulsory Department Course 3 Compulsory CA Courses 4 Elective CA CourseFinal Project	29	Skill, Managerial Competence, and Independent Work on the Final Project (applying, demonstrating and analyzing)
TOTAL		**144**	

KOMPETENSI

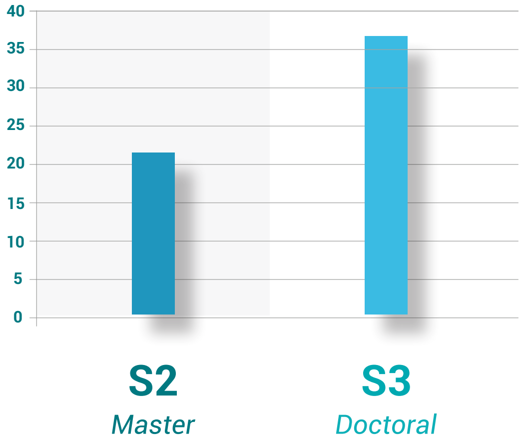
Status atau peringkat akreditasi terakhir PSS TE-ITS adalah A yang ditetapkan melalui nomor SK BAN-PT: 1845/SK/BAN-PT/Akred/S/VI/2017. PSS TE-ITS juga telah lulus program assesment Asean Univerity Network (AUN) yaitu Asean University Network Quality Assurance pada tahun 2017.

COMPETENCE

The status or rank of the last accreditation of PSS TE-ITS is A stipulated through the number of SK BAN-PT: 1845 / SK / BAN-PT / Akred / S / VI / 2017. PSS TE-ITS has also passed the Asean Univerity Network Assessment (AUN) Asean University Network Quality Assurance program in 2017

KOMPETENSI TENAGA AHLI
EXPERT COMPETENCE

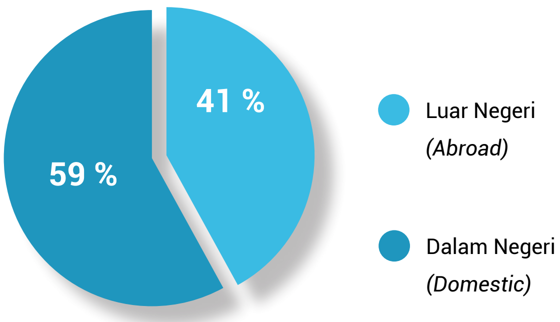
- Jenjang pendidikan Dosen Teknik Elektro
- *Education Level of Electrical Engineering Teaching Staff*



- Bidang keahlian dosen
- *Expertise of Teaching Staff*

Services	Product
Technical Training / Engineering	Braille Machine (Braille script copy)
Technical Consulting Services	
Equipment Testing Services	

- Asal lulusan Perguruan Tinggi
- *Teaching staff's Degree Origins*



* Kegiatan Belajar mengajar

CAPAIAN PEMBELAJARAN LULUSAN DEPARTEMEN TEKNIK ELEKTRO

GRADUATE LEARNING TARGET OF DEPARTMENT OF ELECTRICAL ENGINEERING

Aspek Sikap:

a. Bertaqwa kepada Tuhan Yang Maha Esa dan mampu menunjukkan sikap religius;
b. Menjunjung tinggi nilai kemanusiaan dalam menjalankan tugas berdasarkan agama, moral dan etika;
c. Berkontribusi dalam peningkatan mutu kehidupan bermasyarakat, berbangsa, bernegara, dan peradaban berdasarkan Pancasila;
d. Berperan sebagai warga negara yang bangga dan cinta tanah air, memiliki nasionalisme serta rasa tanggungjawab pada negara dan bangsa;
e. Menghargai keanekaragaman budaya, pandangan, agama, dan kepercayaan, serta pendapat atau temuan orisinal orang lain;
f. Bekerja sama dan memiliki kepekaan sosial serta kepedulian terhadap masyarakat dan lingkungan;
g. Taat hukum dan disiplin dalam kehidupan bermasyarakat dan bernegara
h. Menginternalisasi nilai, norma, dan etika akademik;
i. Menunjukkan sikap bertanggung jawab atas pekerjaan di bidang keahliannya secara mandiri;
j. Menginternalisasi semangat kemandirian, kejuangan, dan kewirausahaan;
k. Mematuhi dan menjunjung tinggi kode etik dan profesi yang berkenaan dengan pelayanan medis secara umum maupun klinis.

Aspek Ketrampilan Umum:

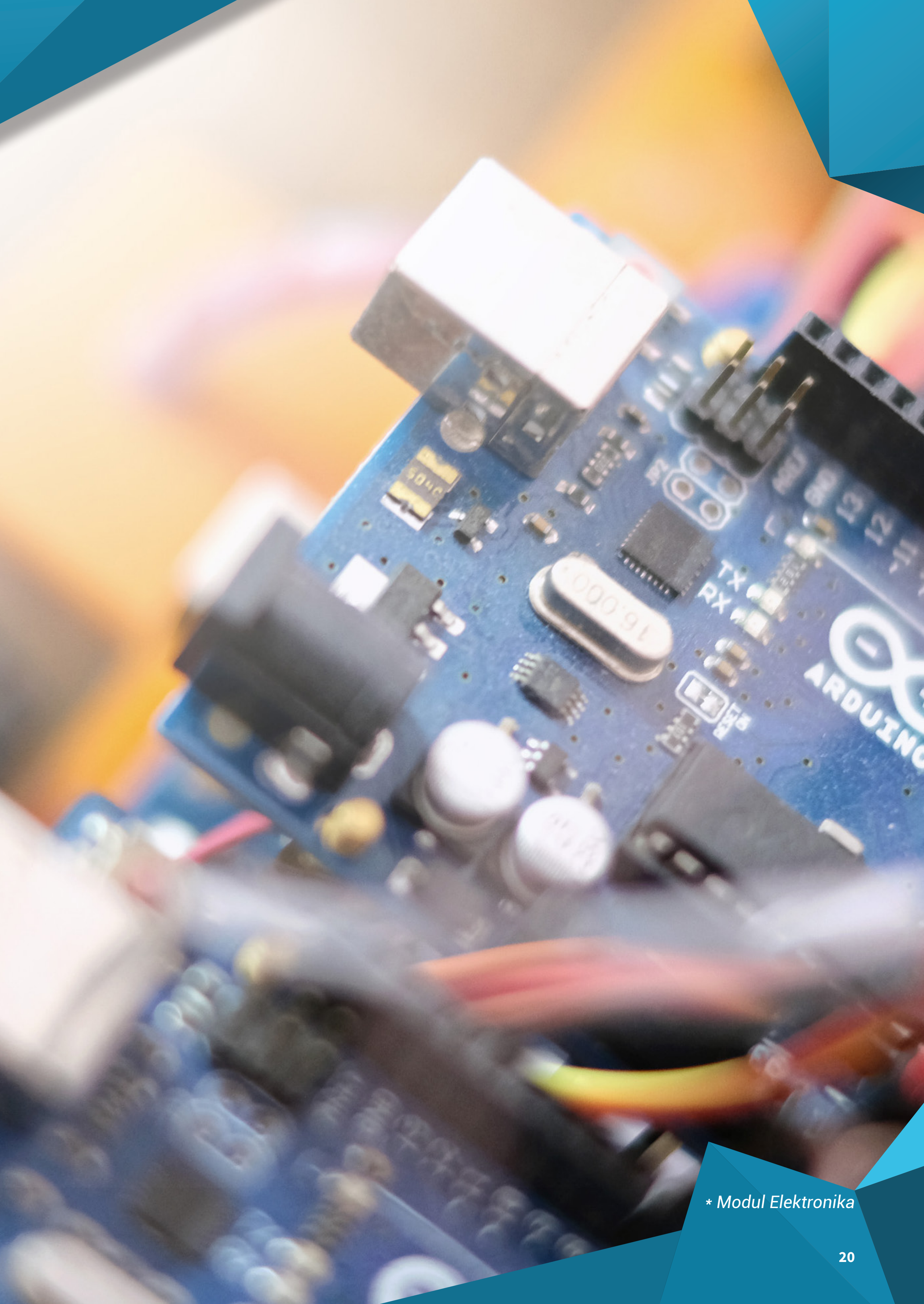
a. Mampu menerapkan pemikiran logis, kritis,

Attitude Aspects:

a. Showing obedience to God Almighty and be able to show religious attitude;
b. Upholding humanitarian values in carrying out duties based on religion, morals, and ethics.
c. Contributing to improving the quality of life of society, nation, state, and the progress of civilization based on Pancasila;
d. Contributing as a proud citizen and love of the country, having nationalism and a sense of responsibility to the state and nation;
e. Respecting cultural diversity, views, religion, and beliefs, as well as the original opinions or findings of others;
f. Cooperating and possessing social sensitivity and concern for the society and environment;
g. Adhering to the law and be a disciplined citizen within social life and state;
h. Internalizing academic values, norms, and ethics;
i. Independently demonstrate a responsible attitude towards work within the field of expertise;
j. Internalizing the spirit of independence, striving, and entrepreneurship;
k. Comply with and uphold the code of ethics and profession relating to general and clinical medical services.

General Skill Aspects:

a. Able to apply logical, critical, systematic, and innovative thinking in the context of development or implementation of science and technology that cares and implements the humanities value in accordance with the field


TX
RX
16.000

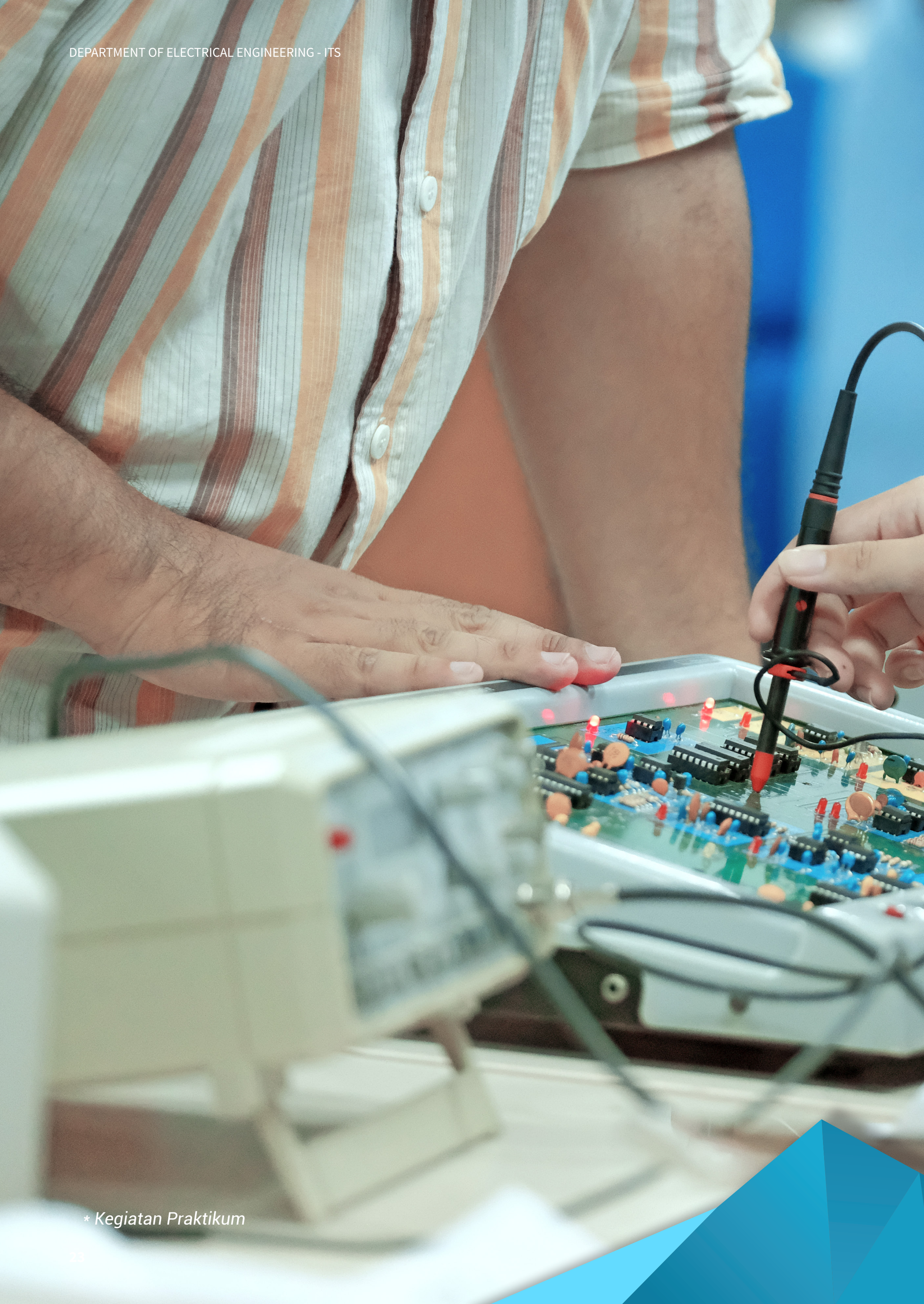
sistematis, dan inovatif dalam konteks pengembangan atau implementasi ilmu pengetahuan dan teknologi yang memperhatikan dan menerapkan nilai humaniora yang sesuai dengan bidang Teknik Elektro;

b. Mampu menunjukkan kinerja mandiri, bermutu, terukur, dan sistematis;
c. Mampu mengkaji implikasi pengembangan atau implementasi ilmu pengetahuan dan teknologi yang memperhatikan dan menerapkan nilai humaniora sesuai dengan bidang Teknik Elektro berdasarkan kaidah, tata cara dan etika ilmiah dalam rangka menghasilkan solusi, gagasan, desain atau kritik seni;
d. Mampu menyusun deskripsi saintifik hasil kajian tersebut di atas dalam bentuk skripsi atau laporan tugas akhir, dan mengunggahnya dalam laman perguruan tinggi;
e. Mampu mengambil keputusan secara tepat dalam konteks penyelesaian masalah di bidang Teknik Elektro, berdasarkan hasil analisis informasi dan data;
f. Mampu memelihara dan mengembangkan jaringan kerja dengan pembimbing, kolega, sejawat baik di dalam maupun di luar lembaganya.
g. Mampu bertanggung jawab atas pencapaian hasil kerja kelompok dan melakukan supervisi serta evaluasi terhadap penyelesaian pekerjaan yang ditugaskan kepada pekerja yang berada di bawah tanggung jawabnya;
h. Mampu melakukan proses evaluasi diri terhadap kelompok kerja yang berada di bawah tanggung jawabnya, dan mampu mengelola pembelajaran secara mandiri;
i. Mampu mendokumentasikan, menyimpan, mengamankan, dan menemukan kembali data untuk menjamin kesahihan dan mencegah plagiasi;

of Elektrical Engineering;

b. Able to demonstrate independent, quality, measurable, and systematic performance;
c. Able to examine the implications of the development or implementation of science and technology that concerns and implements the humanities value in accordance with the field of Elektrical Engineering based on scientific rules, procedures and ethics in order to produce solutions, ideas, designs or art criticisms;
d. Able to prepare a scientific description of the results of the above study in the form of a thesis or final project report, and upload it in the college page;
e. Be able to make decisions appropriately in the context of solving problems in Electrical Engineering, based on the results of information and data analysis;
f. Able to maintain and develop a network with mentors, colleagues, colleagues both inside and outside the institution.
g. Be able to take responsibility for the achievement of group work and to supervise and evaluate the completion of work assigned to the worker under his / her responsibility;
h. Able to conduct a self-evaluation process against working groups that are under his responsibility, and able to manage learning independently;
i. Able to document, store, secure, and rediscover data to ensure validity and prevent plagiarism;

* Tim Robotika Elektro



* *Kegiatan Praktikum*

Aspek Ketrampilan Khusus:

a. mampu memformulasikan permasalahan rekayasa pada sistem tenaga listrik, sistem pengaturan, telekomunikasi multimedia, atau elektronika
b. mampu mendeskripsikan penyelesaian permasalahan rekayasa pada sistem tenaga listrik, sistem pengaturan, telekomunikasi multimedia, atau elektronika
c. mampu mendeskripsikan rancangan sistem untuk penyelesaian masalah dalam sistem tenaga listrik, sistem pengaturan, telekomunikasi multimedia, atau elektronika dengan mempertimbangkan standar teknis, aspek kinerja, keandalan, kemudahan penerapan, dan jaminan keberlanjutan
d. mampu mengimplementasikan alternatif penyelesaian permasalahan rekayasa pada sistem tenaga listrik, sistem pengaturan, telekomunikasi multimedia, atau elektronika yang memperhatikan faktor-faktor ekonomi, kesehatan dan keselamatan publik, kultural, sosial dan lingkungan
e. mampu memanfaatkan perangkat analisis dan perancangan rekayasa berbasis teknologi informasi dan komputasi yang sesuai dalam melakukan aktivitas rekayasa pada sistem tenaga listrik, sistem pengaturan, telekomunikasi multimedia, atau elektronika

Aspek Pengetahuan:

a. Menguasai konsep dan prinsip sains alam dan matematika rekayasa dan mewujudkannya dalam bentuk prosedur yang diperlukan untuk analisis dan perancangan pada sistem tenaga listrik, sistem pengaturan, telekomunikasi multimedia, atau elektronika
b. Menguasai konsep dan prinsip rekayasa dan mewujudkannya dalam bentuk prosedur yang diperlukan untuk analisis dan perancangan

Special Skills Aspects:

a. *able to formulate engineering problems on electric power systems, regulatory systems, multimedia telecommunications, or electronics*
b. *able to describe the settlement of engineering problems on electric power systems, regulatory systems, multimedia telecommunications, or electronics*
c. *able to describe system design for problem solving in electric power system, regulatory system, multimedia telecommunication, or electronics taking into account technical standard, performance aspect, reliability, ease of application, and guarantee of sustainability*
d. *capable of implementing alternative solutions to engineering problems on electrical power systems, regulatory systems, multimedia telecommunications, or electronics that take account of economic, health and safety, public, cultural, social and environmental factors*
e. *able to utilize analytical tools and engineering design based on appropriate information and computing technology in performing engineering activities on electric power systems, regulatory systems, multimedia telecommunications, or electronics*

Knowledge Aspect:

a. *Mastering the concepts and principles of natural science and engineering mathematics and making it happen in the form of procedures necessary for analysis and design of power systems, regulatory systems, multimedia telecommunications, or electronics*
b. *Mastering the concepts and principles of engineering and making it happen in the form of procedures necessary for analysis and design of power systems, regulatory*

pada sistem tenaga listrik, sistem pengaturan, telekomunikasi multimedia, atau elektronika

c. Menguasai konsep, prinsip dan prosedur perancangan sistem tenaga listrik, sistem pengaturan, telekomunikasi multimedia, atau elektronika

d. Menguasai konsep, prinsip dan prosedur yang terkait dengan aspek-aspek dalam ekonomi, sosial, ekologi secara umum pada sistem tenaga listrik, sistem pengaturan, telekomunikasi multimedia, atau elektronika

systems, multimedia telecommunications, or electronics

c. Mastering the concepts, principles and procedures for designing electric power systems, control systems, multimedia telecommunications, or electronics

d. Mastering concepts, principles and procedures relating to aspects in economics, social, ecology in general in electric power systems, control systems, multimedia telecommunications, or electronics

FASILITAS

a. Laboratorium*

Laboratorium memiliki 3 fungsi utama yaitu, sebagai lab pengajaran, yaitu penunjang proses pembelajaran (praktikum), sebagai pusat riset bagi mahasiswa, dosen, dan kelompok-kelompok riset, dan sebagai pusat pelayanan kepada masyarakat.

b. Perpustakaan

c. Prasarana Olah Raga dan Seni

d. Sarana ibadah

e. Medical Center ITS

f. Perbankan

g. Kantin

h. Area Parkir

i. Taman

j. Koperasi Departemen Elektro

FACILITY

a. Laboratory

The laboratory has three main functions, namely, as a teaching laboratory, supporting the learning process (practicum), as a research center for students, lecturers, and research groups, and as a service center to the community.

b. Library

c. Sports and Art Infrastructure

d. Place of worship

e. Medical Center ITS

f. Banking

g. Canteen

h. Parking area

i. Garden

j. Cooperative Department of Electrical

LABORATORY

No	Room	Laboratory
1	A 102	*High Voltage Laboratory*
2	AJ 103	*Industrial Automation and Informatics Laboratory*
3	B 101/ B 102	*Electrical Energy Conversion Laboratory*
4	B 103	*Electric Power System Simulation Laboratory*
5	B 105 / AJ 104	*Control Engineering Lab*
6	B 204 / AJ 302	*Instrumentation, Measurement and Identification of Power System*
7	B 205	*Biomedical Electronics Laboratory*
8	AJ 303	*Basic Electronics Laboratory*
9	B 306	*Antenna Laboratory and Propagation*
10	B 301/ AJ 404	*Telecommunication Network Laboratory*
11	B 304 / AJ 404	*Multimedia Communication Laboratory*
12	B 403	*Industrial Electronics Laboratory*
13	B 405 / AJ 204	*Systems and Cybernetics Laboratory*

Departemen Teknik Elektro memiliki 13 laboratorium

The Department of Electrical Engineering has 13 laboratories,


POWER
ELECTRONIC
MODULE KIT

PENCAPAIAN
ACHIEVEMENTS

No	Nama Kegiatan dan Waktu Penyelenggaraan	Tingkat (Lokal, Wilayah Nasional, atau Internasional)	Prestasi Yang Dicapai
1	Indonesia Energy Innovation Challenge 2017	Nasional	Juara 2
2	Mate ROV Competition 2017	International	Juara 3
3	10th International Roboboat Competition 2017	International	Juara 4
4	FIRA Robo World Cup & Congress 2017	International	Juara 1
5	KRTI 2017 Divisi VTOL (Vertical Take Off Landing)	Nasional	Juara 1

Keterangan Foto

Mate ROV Competition 2017 2

10th International Roboboat Competition 2017 3

FIRA Robo World Cup & Congress 2017 4

KRTI 2017 Divisi VTOL (Vertical Take Off Landing) 5


2


國立高雄第一科技大學
2017
FIRA RoboWorld Cup & Congress
National Kaohsiung First University of Science & Technology
23 - 27 August 2017
PPIK
KAOHSIUNG
4


3


5

6	The 3rd International Young Inventors Award (IYIA 2016), September 2016, Surabaya Convention Hall oleh IYIA	International	Gold Medal
7	TOTAL CAMPUS 2016, 1 Februauri Oleh TOTAL S.A	International	Juara Kategori Innovate Grant
8	"Make a Difference" (MaD) Forum, 22-24 Januari 2016 di Hongkong Oleh The Hong Kong Computer Society	International	Delegation
9	Winter IT School Program, 25 Januari - 6 Februari 2016 di Rusia oleh Tomsk State University Russia	International	Exchange Student
10	Applied Mathematics in Science and Engineering International Conference (APPEMSE), 26-28 Januari 2016 di Malaysia oleh Malaysia Technical Scientist Association (MALTESAS)	International	Presenter

* Mahasiswa Departemen Teknik Elektro

PARTNERSHIP

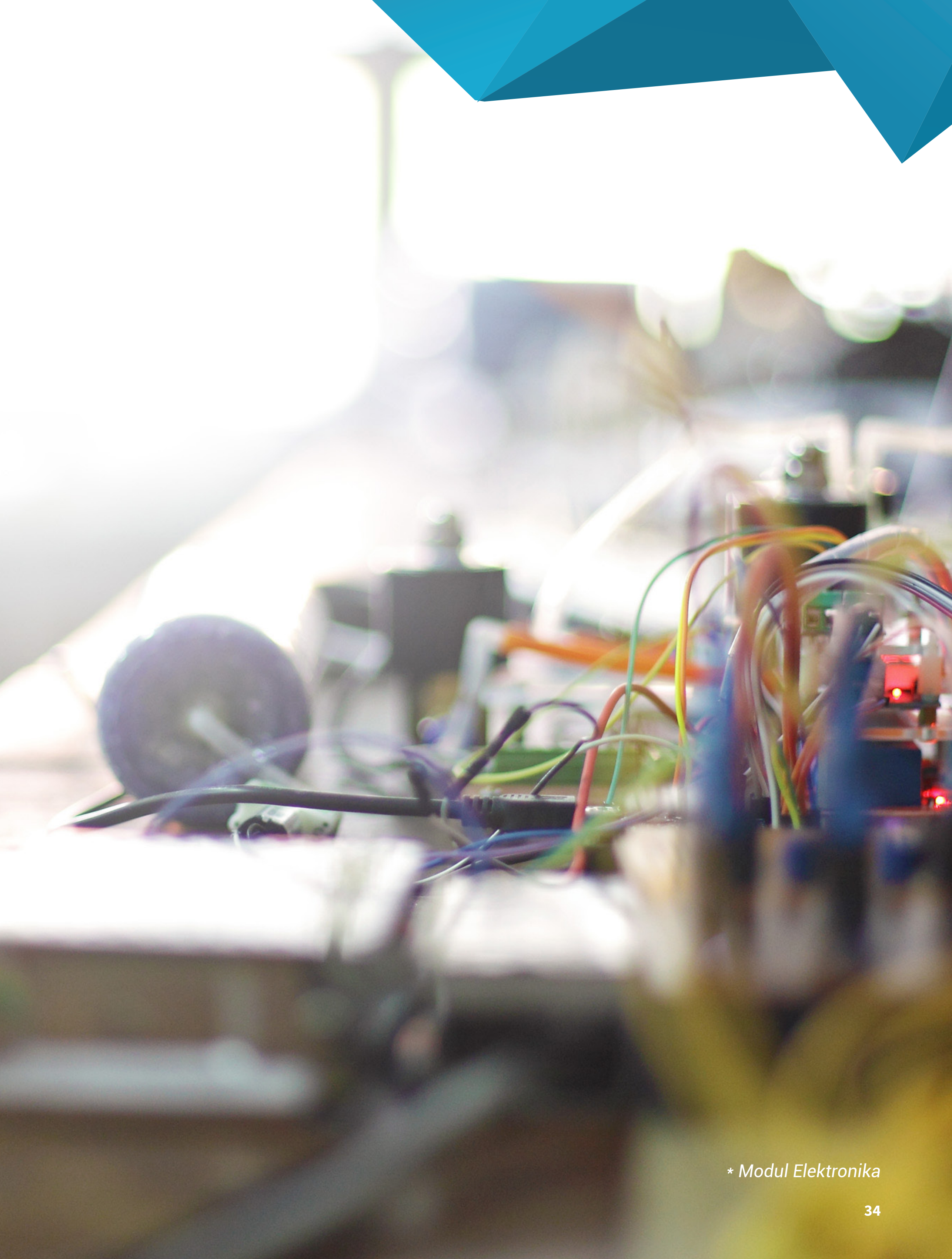
Sebagai salah satu departemen tertua di ITS, Teknik Elektro telah menjalin kerja sama dengan berbagai institusi, baik di dalam maupun luar negeri.

As one of the oldest departments in ITS, Electrical Engineering has established cooperation with various institutions, both at home and abroad.

Instansi Dalam Negeri Yang Menjalin Kerjasama Terkait Dengan Program Studi

Domestic Agencies That Initiate Cooperation Related to Study Program

No.	Nama Instansi
01	Badan Kepegawaian Daerah Pemerintah
02	Provinsi Jawa Timur
03	BKLN, Indonesia
04	Dinas Perhubungan Kota Surabaya
05	PT Hess (Indonesia –Pangkah) Ltd
06	PT JOB Pertamina - Medco E&P Tomori Sulawesi
07	PT JOB Pertamina Talisman Jambi Merang
09	KOMINFO, Indonesia
10	PT PLN, Indonesia
11	PT Hutama Karya
12	PT Kaltim Daya Mandiri
13	PT Krakatau Bandar Samudra
14	PT Medco E & P Rimau
15	PT Pembangkitan Jawa Bali
16	PT Pertamina (Persero)
17	PT Semen Indonesia (Persero) Tbk
18	PT. Gresik Power Indonesia
19	PT. Medco E&P Lematang
20	PT. Mulia Sasmita Bhakti - Cabang Surabaya
21	PT. Pelabuhan Indonesia III (Persero)
22	PT. Pembangkitan Jawa - Bali
23	PT. Pupuk Sriwidjaja Palembang
24	PT Saka Indonesia Pangkah Ltd



* Modul Elektronika

Instansi Luar Negeri Yang Menjalin Kerjasama Terkait Dengan Program Studi

Overseas Institution In Cooperation Related to Study Program

No.	Nama Instansi
01	Anadolu University
02	ASEA UNINET
03	AUN SEED NET
04	California Polytechnic State University
05	Chulalongkorn University
06	Curtin University of Technology
07	Darmstadt University of Applied Science, Jerman
09	Dong Eui University
10	Ecole Centrale De Lyon
11	Ecole Centrale De Nantes
12	Ecole Internationale des Sciences du Traitement de l'Information (EISTI)
14	Eindhoven University of Technology
15	ERASMUS MUNDUS
16	FONTYS University of Applied Sciences

No.	Nama Instansi
17	Hiroshima University, Japan
18	Ho Chi Min University of Technology
19	IHE Delft Foundation
20	INP Toulouse
21	Institut National Des Science Apliquees De Rennes
22	King Mongkut's Institute of Technology Ladkrabang
23	Kumamoto University
24	Kyushu University
25	Nagoya University
26	National Cheng Kung University, Taiwan
27	National Taiwan University of Science and Technology
28	NUVOTON Technology Corporation, Taiwan

No.	Nama Instansi
29	Osaka City University
30	Osaka University
31	Queensland University of Technology, Australia
32	Saga University-Faculty of Science and Engineering , Japan
33	Saxion Universities of Applied Sciences
34	Soka University – Japan
35	Suranaree University
36	Tohoku University
37	Tokyo University of Technology
38	Tottori University, Japan
39	Universidade Nacional Timor Lorosa'e (UNTL)
40	Universite de Technologie Compiegne
41	Universiti Malaysia Pahang
42	Universiti Malaysia Perlis

No.	Nama Instansi
43	Universiti Teknikal Malaysia Melaka
44	Universiti Teknologi Petronas (UTP)
45	University de Nantes
46	University of Burgundy
48	University of Malaya
49	Univesite de Toulouse

STRUKTUR KURIKULUM
CURRICULUM STRUCTURE

SEMESTER I			
1	KM184101	Matematika I *Mathematics I*	3
2	SF184101	Fisika I *Physics I*	4
3	UG184911	Pancasila *Pancasila*	2
4	UG184914	Bahasa Inggris *English*	2
5	UG18490X	Agama *Religion*	2
6	EW184001	Pengantar Teknologi Elektro *Introduction to Electrical Technology*	2
7	EW184002	Dasar Pemograman *Basic Programming*	2
		Jumlah sks	**18**

SEMESTER II			
1	KM184201	Matematika II *Mathematics II*	3
2	SF184202	Fisika II *Physics II*	3
3	SK184101	Kimia *Chemistry*	3
4	UG184913	Kewarganegaraan *Civics*	2
5	UG184912	Bahasa Indonesia *Indonesian*	2
6	EW184003	Rangkaian Listrik *Electric Circuits*	2
7	EE184201	Aljabar Linier dan Struktur Diskrit *Linear Algebra and Discrete Structures*	3
		Jumlah sks	**18**

SEMESTER III			
1	EE184301	Rangkaian Listrik Lanjut *Advanced Electric Circuits*	3
2	EE184302*	Dasar Sistem dan Jaringan Telekomunikasi (Pengayaan) *Introduction to Telecommunication Systems and Networks (Enrichment)*	3
3	EE184303	Medan Elektromagnetik *Electromagnetic Fields*	4
4	EE184304	Persamaan Differensial Biasa dan Parsial *Partial and Ordinary Differential Equations*	3
5	EE184305	Sinyal dan Sistem *Signals and Systems*	3
6	EE184306*	Rangkaian Elektronika (Pengayaan) *Electronic Circuits (Enrichment)*	2
		Jumlah sks	**19**

SEMESTER IV			
1	EE184401	Sistem Digital dan Mikroprosesor *Digital and Microprocessor Systems*	4
2	EE184402*	Dasar Sistem Tenaga Listrik (Pengayaan) *Introduction to Power System Engineering (Enrichment)*	3
3	EE184403	Pengolahan Sinyal Digital *Digital Signal Processing*	3
4	EE184404*	Dasar Sistem Pengaturan (Pengayaan) *Introduction to Control Systems (Enrichment)*	3
5	EE184405	Probabilitas, Statistik, dan Proses Stokastik *Probability, Statistics, and Stochastic Processes*	4
6	EE184406	Lab. Dasar Listrik dan Sistem Telekomunikasi 3 *Electrical Engineering Laboratory 1*	3
		Total sks	**20**

SEMESTER V			
1	EE184005	Metode Numerik *Numerical Methods*	3
2	EE184501	Rangkaian Analog *Analog Circuits*	3
3	EE184502	Lab. Elektronika, Dasar Sistem Tenaga dan Sistem Pengaturan *Electrical Engineering Laboratory 2*	4
4		MK Bidang Keahlian *Field of expertise*	11
		Jumlah sks	**20**

SEMESTER VI			
1	UG184915	Teknopreneur *Technopreneurship*	2
2	EE184601	Kerja Praktik *Industrial Training*	2
3		MK Pengayaan *Enrichment*	4
4		MK Bidang Keahlian *Expertise*	12
		Jumlah sks	**19**

SEMESTER VII			
1	UG184916	Wawasan dan Aplikasi Teknologi *Concept of Technology*	3
2	EE184701	Pra Tugas Akhir *Final Project Proposal*	3
3		MK Bidang Keahlian *Expertise*	3
4		MK Pilihan *Choice*	9
		Jumlah sks	**18**

SEMESTER VIII			
1	EE184801	Tugas AKhir *Final Project*	6
2		MK Pilihan *Choice*	6
		Jumlah sks	**12**

MATA KULIAH BIDANG KEAHLIAN :
EXPERTISE COURSE :

A. Teknik Sistem Tenaga

A. Power Systems Engineering

SEMESTER V			
1	EE184511	Analisis Sistem Tenaga *Power System Analysis*	4
2	EE184512	Mesin Listrik *Electric Machines*	4
3	EE184513	Teknik Tegangan Tinggi *High Voltage Engineering*	4
		Jumlah sks	**18**

SEMESTER VI			
1	EE184611	Elektronik Daya *Power Electronics*	3
2	EE184612	Pembangkitan Tenaga Listrik *Power System Generation*	3
3	EE184613	Transmisi dan Peralatan Tegangan Tinggi *High Voltage Transmission and Apparatus*	3
4	EE184614	Distribusi Tenaga Listrik *Power System Distribution*	3
		Jumlah sks	**12**

SEMESTER VII			
1	EE184711	Lab. Sistem Tenaga *Power System Engineering Laboratory*	3
		Jumlah sks	**3**

B. Teknik Sistem Pengaturan

B. Control System Engineering

SEMESTER V			
1	EE184521	Analisis dan Desain Sistem Pengaturan *Control System Analysis and Design*	4
2	EE184522	Otomasi Sistem *System Automation*	3
3	EE184523	Teknik Optimasi *Optimization Techniques*	4
		Jumlah sks	**11**

SEMESTER VI			
1	EE184621	Instrumentasi SIstem Pengaturan *Control System Instrumentation*	3
2	EE184622	Sistem Pengaturan Digital *Digital Control System*	3
3	EE184623	Komputasi Sistem Linier *Linear System Computation*	3
		Jumlah sks	**9**

SEMESTER VII			
1	EE184721	Lab. Pengaturan Digital dan Optimasi *Digital Control and System Automation Laboratory*	2
2	EE184722	Perancangan dan Integrasi Sistem *System Design and Integration*	4
		Jumlah sks	**6**

C. Telekomunikasi Multimedia

C. Multimedia Telecommunications

SEMESTER V			
1	EE184531	Sistem Komunikasi I *Communication Systems I*	3
2	EE184532	Transmisi Gelombang ElektroMagnetik dan Antena *Electromagnetic Wave Transmission and Antennas*	4
3	EE184533	Jaringan dan Rekayasa Trafik *Networks and Traffic Engineering*	4
		Jumlah sks	**11**

SEMESTER VI			
1	EE184631	Sistem Komunikasi II *Communication Systems II*	3
2	EE184632	Propagasi Gelombang *Wave Propagation*	3
3	EE184633	Elektronika Telekomunikasi *Communication Electronics*	3
4	EE184634	Jaringan Komunikasi Nirkabel *Wireless Communication Networks*	3
		Jumlah sks	**12**

SEMESTER VII			
1	EE184731	Lab. Telekomunikasi *Telecommunication Laboratory*	3
		Jumlah sks	**3**

D. Elektronika

D. Electronics

SEMESTER V			
1	EE184541	Divais Semikonduktor dan Rangkaian Terintegrasi *Semiconductor Devices and Integrated Circuit*	4
2	EE184542	Sistem Elektronika Tertanam *Embedded Electronic System*	4
3	EE184543	Sensor dan Akuator *Sensors and Actuators*	3
		Jumlah sks	**11**

SEMESTER VI			
1	EE184641	Perancangan SIstem Elektronika Analog *Design of Analog Electronic Systems*	3
2	EE184642	Akusisi Data dan Pengelolahan Sinyal *Data Acquisition and Signal Processing*	3
3	EE184643	Perancangan Komponen Terprogram *Design Using Programmable Device*	3
4	EE184644	Elektronika Industri dan Robotika *Industrial Electronics and Robotics*	3
		Jumlah sks	**12**

SEMESTER VII			
1	EE18474 1	Lab. Sistem Elektronika Terpadu *Integrated Electronic Systems Laboratory*	3
		Jumlah sks	**3**

MATA KULIAH PILIHAN
ELECTIVE COURSES

SEMESTER V			
1	EE184710	Pengaman Sistem Tenaga Listrik *PPower System Protection*	2
2	EE184810	Desain dan Instalasi Tenaga Listrik *Electrical Design and Installation*	4
3	EE184910	Operasi Optimum SIstem Tenaga Listrik *Optimum Operation of Power System*	3
4	EE184911	Fenomena Transien Tegangan Tinggi *High Voltage Transient*	3
5	EE184912	Penggunaan dan Pengemudian Motor Listrik *Electric Motor Application and Drive*	3
6	EE184913	Dinamika dan Stabilitas Sistem Tenaga Listrik *Dynamic and Stability of Power System*	3
7	EE184914	Kecerdasan Buatan dalam Sistem Tenaga Listrik *Artificial Intelligence in Power System*	3
8	EE184915	Perencanaan Sistem Tenaga Listrik *Power System Planning*	3
9	EE184916	Kualitas Daya Listrik *Power Quality*	3
10	EE184917	Pemeliharaan Peralatan Listrik *Electrical Equipment Maintenance*	3
11	EE184918	Sistem Energi Baru dan Terbarukan *Renewable Energy System*	3
12	EE184919	Manajemen Proyek dan Keselamatan Kerja *Project Management and Occupational Safetyv*	3
13	EE184920	Sistem Pengaturan Optimal *Optimal Control Systems*	3
14	EE184921	Sistem Pengaturan Adaptif *Adaptive Control Systems*	3
15	EE184922	Sistem Pengaturan Cerdas *Intelligent Control Systems*	3
16	EE184923	Pengolahan Sinyal Pengaturan *Signal Processing for Control Systems*	3
17	EE184924	Analisis Jaringan *Network Analysis*	3
18	EE184925	Sistem Multi Agen *Multi-agent Systems*	3
19	EE184926	Sistem Pengaturan Proses *Process Control Systems*	3
20	EE184927	Pengaturan Penggerak Elektrik *Control of Electric Drives*	3
21	EE184928	Robotika *Robotics*	3
22	EE184929	Sistem Pengaturan Embedded *Embedded Control Systems*	3
23	EE184930	Sekuriti dan Kriptografi *Security and Cryptography*	3
24	EE184931	Sistem Gelombang Mikro, Radar dan Navigasi *Microwave, Radar and Navigation Systems*	3
25	EE184932	Standard dan Keandalan *Standard and Reliability*	3
26	EE184933	Sistem Broadcast *Broadcasting System*	3
27	EE184934	Layanan Dalam Jaringan *Services over Networks*	3
28	EE184935	Rekayasa Sistem dan Manajemen Proyek Telekomunikasi *Telecommunication System Engineering and Project*	3
29	EE184936	Rekayasa Internet dan Web *Internet Engineering and Web*	3

30	EE184937	Pengolahan Sinyal Multimedia *Multimedia Signal Processing*	3
31	EE184938	Jaringan Sensor Nirkabel dan IoT *Wireless Sensor Network and Internet of Things (IoT)*	3
32	EE184939	Jaringan Satelit dan Pengindraan Jauh *Satellite Network and Remote Sensing*	3
33	EE184940	Dasar Sistem Elektronika Cerdas *Basic Intelligent Electronic System*	3
34	EE184941	Divais Optoelektronika *Optoelectronic Devices*	3
35	EE184942	Sistem Kontrol Elektronika *Electronic Control System*	3
36	EE184943	Instrumentasi Elektronika *Electronic Instrumentation*	3
37	EE184944	Penginderaan Visual Elektronika *Machine Vision*	3
38	EE184945	Sistem Robot Otonom *Autonomous Robot System*	3
39	EE184802	Topik Khusus *Special Topics in Electrical Engineering*	3
40	EE184803	Internship *Internship*	3

* Landscape Gedung Departemen Teknik Elektro

ITS
Institut
Teknologi
Sepuluh Nopember

elektro - its

Kontak Kami:

Departemen Teknik Elektro
Gedung B, C & AJ
Institut Teknologi Sepuluh Nopember
Surabaya, Jawa Timur - Indonesia
Kode Pos 60111
E-mail : elits@ee.its.ac.id
Telephone : (031) 599 4251-54, Ext. 1206 / (62 31) 594 7302
Fax : (031) 593 1237