ADVANCING HUMANITY

ITS

INTERNSHIP PROGRAM

INTERNSHIP PROGRAM AT ITS

Institut Teknologi Sepuluh Nopember (ITS) proudly opens the opportunities for international students to join the internship program. The aims of internship program is to practice knowledge, attitudes, general and specific skills in the laboratories, industry or communities.

There are 3 (three) types of internship programs offered by ITS:

- Laboratory based internship
- Industrial based internship
- Community based internship

The duration of internship program is generally from 1 up to 6 months.

Laboratory based internship (1-6 months)

Institut Teknologi Sepuluh Nopember (ITS) offers about 100 interesting topics for laboratory - based internship program. The duration for this program is generally from 1 (one) up to 6 (six) months. Students will have great experiences in the laboratories as well as in non - academic activities such as trips and cultural camp.

FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS (CREABIZ)

Product Design

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Integrated Digital Design (iDIG)	4 - 6	• Low Cost Assistive and Welfare Medical Devices based 3D Printer • 3D Fashion Development based Rapid Prototyping • 3D Medical Learning based Integrated Digital Design • Development of Kidney Stent Design

Interior Design

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Behavior and Environment	6	Human Behavior and Interior at Home by Cultural Approach

Visual Communication Design

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Creative Digital Media	3	Video, Film and Animation Media, Games and new media, Creative digital content, Creative branding packaging

Business Management

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Business Analytic and Strategy	4	Developing the Information System for Internship and Transfer Credit Programs

Development Studies

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Manag. of Resource Development and Community Empowerment	3 - 6	Laboratory management and operation; practicum module development/improvement

FACULTY OF INTELLIGENT ELECTRICAL AND INFORMATICS TECHNOLOGY (ELECTICS)

Electrical Engineering

Laboratory	Prefered Duration (months)	Lab. Based Internship Topics
Instrumentation, Measurement, and Power System Identification	2 - 3	Characterization of battery and/or supercapacitor.
Energy Conversion	3	Electric machine and drives
High Voltage	3	High Voltage Generation
Microelectronics and Embedded System	3	Design and implementation Analog & Digital Filter
Multimedia Communication	2 - 3	UAV-Assisted IoT Network

Biomedical Engineering

Laboratory	Prefered Duration (months)	Lab. Based Internship Topics
Biocybernetics	4	• Muscle Modeling in Development of Functional Electrical Stimulation Control Strategy • Fuzzy Logic Application for Human Movement Rehabilitation Control • Model Predictive Control for Biomedical Engineering Application.

Computer Engineering

Laboratory	Prefered Duration (months)	Lab. Based Internship Topics
Telematics	1 - 4	Deep Learning
Digital Signal Processing	1 - 4	Computer Vision
Multimedia Computing and Machine Learning	1 - 4	Robotic and Artificial Intelligence

Informatics

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Net-Centric Computing Laboratory	6	Network Intrusion Detection System with Machine Learning
Information Intelligent Management	3	• Graph based Process mining • Electronic Nose applications • Business process optimization • Event mining • Development of Healthcare applications

Information System

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Data Engineering and Business Intelligence	6	• Timetable Scheduling • Business Intelligence

Information Technology

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Smart City and Cybersecurity	1 - 3	• IoT for Smart City • Capture The Flag Workshop and Competition • Cybersecurity • IoT for Smart Farming

FACULTY OF SCIENCE AND DATA ANALYTICS (SCIENTICS)

Mathematics

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Analysis, Algebra, and Mathematics for Education	1 - 4	Modeling, Analysis, Control, Verification and Applications of Max-Plus Algebra in Transportation Networks and Production Systems
Modeling and Simulation	1 - 4	Mathematical Modeling of Micropolar, Viscos Elastic and Nano Fluid Flows Through Blunt Body under The Effect of Magnetic Field and Mixed Convection
Mathematics for Industry and Finance	1 - 4	Financial Mathematics and Operations Research
Programming and Visual Computing	1 - 4	Programming and Visual Computing
Machine Learning and Big Data	1 - 4	Computing

Statistics

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Business and Industrial Statistics	1 - 4	Statistical Quality Control
Statistical Computing and Data Science	1 - 4	Medical Image Processing

Chemistry

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Natural Material Chemistry and Synthesis	3 - 6	Natural Products with Anti-Cancer, Anti-Diabetic and Anti-Malarial Activities, Synthesis of Small Molecule Active Compounds.
Microbial Chemistry	3 - 6	Biodegradation of Industrial Waste
Instrumentation and Analytical Science	3 - 6	Marker of various types of sensors for heavy metal analysis, preparation of various types of sensors for analysis on food ingredients and traditional medicine, nanoparticle cystinosis as a sensor active material, electroanalytical chemistry, development of sugar analysis methods in the sugarcane industry, development of rapid blood type analysis methods, development of AI's fast quality method, halal food sensor manufacturing, detection of pig gelatin.
Material Chemistry and Energy	3 - 6	The Conversion of Methane to Syn-gas using a ceramic membrane, Replacement material for fossil fuels, Zeolite + Carbon Composite, Metal-Organic Framework (MOF) Material, Polymer Membranes and Hydrogen Ion Transfer Catalysts, Heterogeneous Catalyst for Organic Synthesis, Development of Porous Solid Acid Catalysts in the Production of Fine Chemical, Nano-sized Heterogeneous Catalysts, Application of photocatalytic process

Biology

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Zoology and Animal Engineering	1 - 6	• Aquaculture • Animal Biodiversity at Coastal Area • Animal Physiology and development, etc.
Ecology	1 - 6	• Biodiversity of Coastal Area • Biodiversity at Forest Area • Interaction Between Animal and Plants • Forest Health • Ocean Oceanography • Coastal Management • Microplastic • Coral Reef Monitoring
Plantech	1 - 6	• Tissue culture • Microalga • Stress physiology
Microbiology and Biotechnology	1 - 6	Exploring the Microbial Diversity in Coastal Environment

FACULTY OF CIVIL, PLANNING, AND GEO ENGINEERING (CIVPLAN)

Geomatics Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Geodesy and Geodynamics	4	GNSS and altimetry data processing/analysis
Surveying and Cadastral	4	• Low-cost GPS/GNSS for Cadastral Application • Utilization of Participatory Mapping for Mapping Village Boundaries
Geomarine	4	Hydrography Survey
Geoinformatics	3	Integrated Geoinformation

Geophysical Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Exploration of Mineral and Underground Water	4 - 6	The Beauty of Volcano in Indonesia and the Potential of Volcanic System in Indonesia
Environmental and Engineering Geophysics	4 - 6	Disaster Management in Indonesia
Petrophysics	4 - 6	Geothermal Exploration and Monitoring

Civil Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Concrete Advanced Materials and Computational Mechanics	3 - 6	• Development of Advanced, Smart and Green Material for Sustainable Infrastructure • Computational Mechanics for Materials and Structures

Architecture

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Architecture History, Theory and Critics	1 - 6	• Modernization of Nusantara Architecture Through Lifestyle and Energy Utility: Learning from Japanese Wooden Architecture • BIM on Nusantara (Vernacular) Architecture Modelling • Lifestyle Change Investigation during Pandemic and Post-Pandemic Design Theory

Environmental Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Water Treatment Technology	3 - 6	• Water and wastewater treatment design and technology • Domestic wastewater and Sanitation • Water Supply and Water Loss
Environmental Remediation	3 - 6	• Remediation Technologies Screening Matrix to Remediate Contaminated Soil/Water • Design of Remediation Technique for Toxic Site/ Contaminated Site • Bioremediation and Phytoremediation Laboratory/ Pilot Scale Experiment • Soil Washing Technology Pilot Scale Experiment
Solid Waste Management and Hazardous	3 - 6	• Recyclable Waste Material Flow Analysis (survey/mapping) • Microplastic Identification and analysis • Solid Waste Leachate Treatment • Bioconversion of Organic Solid Waste using BSF Larvae • Waste Collection and Reduction System

FACULTY OF INDUSTRIAL TECHNOLOGY AND SYSTEMS ENGINEERING (INDSYS)

Mechanical Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
System and Control Engineering	1 - 2	Dynamic Analysis of Parallel Robot using ADAMS

Engineering Physics

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Energy Engineering and Environmental Conditioning	2	• External Flows: Blasius flow with Pressure Gradient • Hydrokinetic Turbines • Energy Storage
Advanced Functional Materials	3	• Artificial Neural Network (ANN) for Organic/Inorganic Pollutant Identification • Neurotransmitter Detection using Colorimetric-based Measurements
Vibration and Acoustics	6	• Infrasound Detector Development for Silent Earthquake and tsunami • Wireless Acoustic Networks

Materials and Metallurgical Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Materials Innovation	6	• Polymeric and Composite Materials from Natural resources • Recycle Polymer • Polymer and Composite Material for Energy App. • Polymer and Composite Materials for Medical App. • Computational and Mechanic of Materials
Metallurgy and Manufacturing	6	• Al Foam: Synthesis, Modification, Application • Biomaterial for Orthopedic • Bipolar Plate Development: Surface Modification • PEM Fuel Cell Manufacture
Materials Chemistry	6	Synthesis of Nanomaterial for Photocatalytic Fuel Cell, Quantum Dots for Therapeutic Agents, Electropunks Nanofiber for Biosensor

Industrial and Systems Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Quantitative Modeling and Industrial Policy Analysis	3	Editorial Team for a Near-Published Book
Ergonomics and Work System Design	3 - 6	• Product Design and Development • Job/Method Design • Occupational Safety and Health • Environmental Aspect in Ergonomics • Cognitive Ergonomics • Virtual/Augmented Reality • UI/UX Design and Evaluation
Logistics and Supply Chain Management	3 - 6	• Designing a Smart Logistics Laboratory • Designing a Smart Retail Concept for A Teaching Factory Facility • Production Planning and Inventory Control • Procurement • Logistics management • Supply Chain Management for Manufacturing Industries • Supply Chain Management for Indonesian Tourism
Industrial Management and System Design	3 - 6	• Product Service System • Strategic and Performance Management • Service Quality Management • Human Resource Development based on Competency Management • Business Information System Design • Knowledge Management • Human Resource Management
Manufacturing System	6	• Smart manufacturing/factory • Smart warehouse/maintenance/quality • Concurrent Engineering/Collaborative Product and Process Development • Lean/Toyota Production Systems • Quality Engineering and Management • Sustainable Manufacturing • Life Cycle Analysis • Industrial Automation/Karakuri • Manufacturing Systems • Environment Management • Productivity • Reliability Engineering and Management • Maintenance Management • Computer Integrated Manufacturing • Six Sigma • Technology Management

FACULTY OF MARINE TECHNOLOGY (MARTECH)

Marine Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Reliability and Safety	3	LNG terminal Desain, Risk assessment of marine installation, Ship Collision Risk Assessment, Traffic Separation Scheme, onshore receiving facilities for Gas, Design for subsea pipeline, Fire and explosion analysis, Automatic Identification system (AISITS)
Digital Marine Operation and Maintenance	3	Research related to Digital-Twin for Marine Operation & Maintenance 4.0, such as Marine Modeling and Simulation, Application of Digital Twin in Industry, Supporting Software Artificial Intelligence and Machine Learning, Digital Asset Integrity Management (AIM), and Digital Maritime Education and Training

Ocean Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Ocean Structure Hydrodynamics	3	Numerical model of Floating Breakwater
Ocean Structure, Material and Production	3	• Steel Corrosion Study Case in Ocean Structure • Fatigue Analysis in Ocean Structure
Ocean Engineering Construction	3	Design and Numerical Analysis of an Offshore Aquaculture
Ocean Engineering Hydro-Information	3	• Current Turbine Design • Risk analysis for Ocean Engineering Study Case
Environment and Ocean Energy	3	Ocean model for Tidal Current Estimation in Archipelago Area
Coastal and Port Infrastructure	3	Artificial reef design study

FACULTY OF VOCATIONAL (VOCATION)

Electrical Automation Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
PLC and Supervisory Control System	3	Programmable Logic Controller, SCADA/DCS and Supervisory Control System
Cyber Physical Industrial Robotics and Automation	3	Industrial Robotic Automation, Artificial Intelligence, and Enterprise System

Industrial Chemical Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Process Operating System	3	Material Synthesis for Industrial Waste Treatment, Extraction of Multicomponent System Containing bio-based Chemicals
Industrial Biotechnology	3	Biogas/bioethanol Production from Biomass, Waste Water Treatment
Applied Chemistry	3	3D printing of synthetic bone from bio-renewable resources
Industrial Chemical Process	3	HAP Synthesis from Bio-Renewable Resources

Instrumentation Engineering

Laboratory	Prefered Duration (months)	Lab. Based InternshipTopics
Instrumentation & Control	3	Instrumentation & Control Simulator Cooling Water System, Instrumentation & Control Solar Panel System 3kW (on grid and off grid system)

Industrial based Internship (3-6 months)

Institut Teknologi Sepuluh Nopember (ITS) collaborates with companies in Indonesia to open wide opportunities for international students who are interested to take part in the industrial internship. Students may nominate a topic and several preferred industries to ITS. We will team up the accepted international students with ITS students for industrial assignment. Based on Indonesian immigration regulation, international students are not allowed to get any salary during the industrial based internship program. The duration of industrial based internship is generally from 3 (three) up to 6 (six) months.

The list of host companies for the industrial based on internship program such as:

- PT. Etex Building Performance Indonesia
- PT. Garuda Maintenance Facility Aero Asia Tbk
- PT. Dok dan Perkapalan Surabaya (Persero)
- PT. Dok Bahari Nusantara
- PT. Philips Ralin Electronics

Community based Internship (1-6 months)

Institut Teknologi Sepuluh Nopember (ITS) collaborates with government institutions, Non-Governmental Organization (NGOs), and many communities in Indonesia to open opportunities for international students who are interested to engage with government institutions or councils, NGOs, and communities around Surabaya in particular topics or projects.

There are several topics you may choose for community-based internship program at ITS:

- Development of Small and Medium Enterprises (SMEs) in Surabaya
- Enhancing the utilization of BLC (Broadband Learning Center) - IT Centers for community at Surabaya
- Technical, economic, and social study of aqua culture project at Indonesian coastal area
- Development of seaweed plantation
- Enhancing green life-style of Indonesian
- Development of blue energy for blue economy
- Teaching in elementary and secondary schools

ADVANCING HUMANITY

Kampus Merdeka INDONESIA JAYA

THANK YOU

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