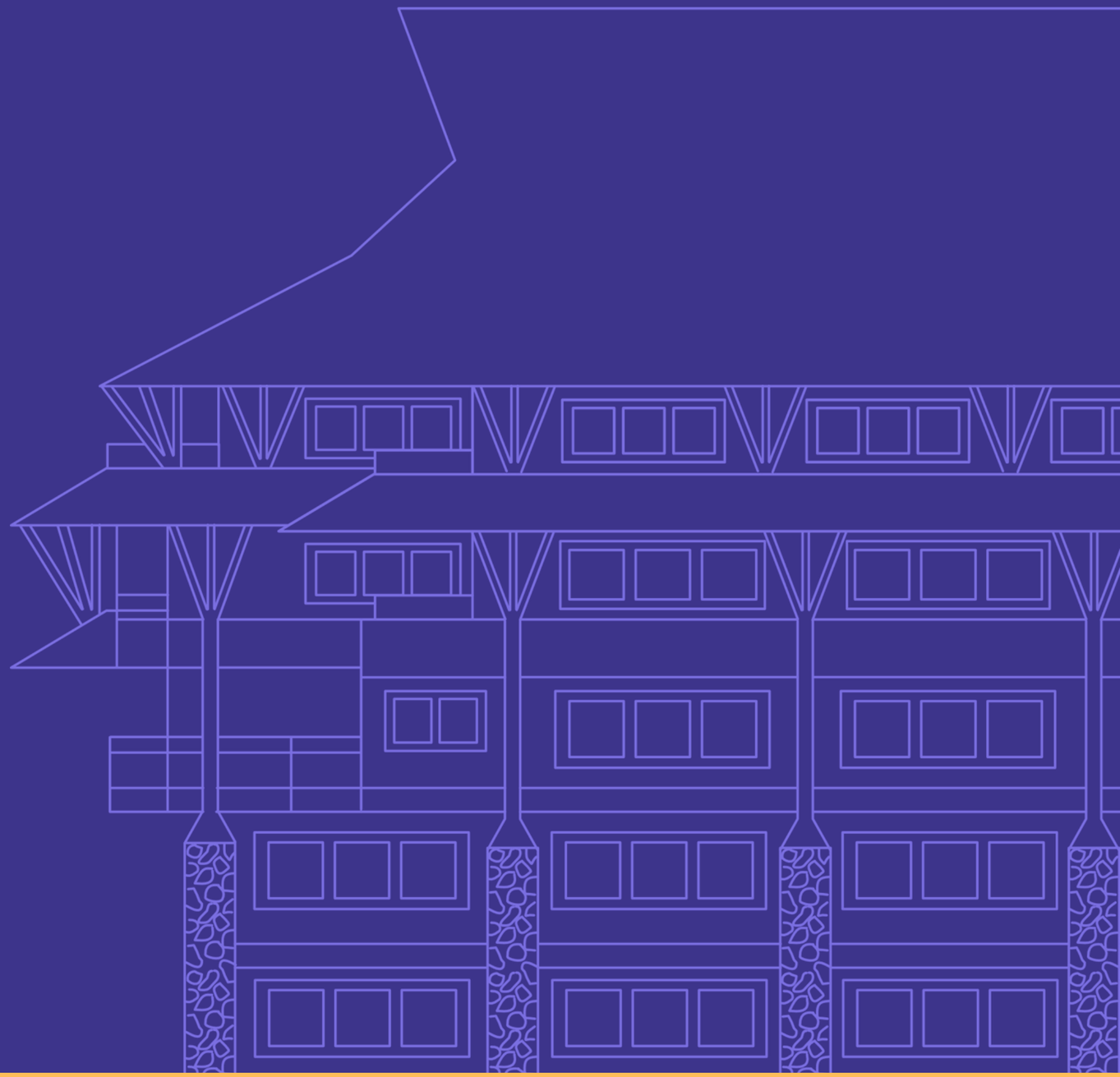
FTITB
FAKULTAS TEKNOLOGI INDUSTRI
INSTITUT TEKNOLOGI BANDUNG

Where your engineering journey begins

Program Overview



Industrial Engineering
International Undergraduate Program

Faculty of Industrial Technology
Institut Teknologi Bandung

multidiscipline, adaptive, innovative

What is Industrial Engineering?

Industrial Engineering focuses on designing and improving complex systems to make organizations more efficient and productive. Industrial engineers analyze operations, identify opportunities for improvement, and implement solutions that reduce waste, lower costs, and enhance quality. The goal is to maximize resources, eliminate bottlenecks, and create sustainable processes that support long-term organizational success.

Curriculum

1st Year
Fundamental science

- Math
- Physics
- Chemistry
- Biology
- Sustainability
- Computation
- Sport
- Engineering drawing
- Engineering design
- Data literacy and AI
- Fundamental labs

2nd Year
Fundamental of engineering

- Industrial Engineering Fundamentals
- Ergonomics & Work Systems
- Probability & Statistics
- Manufacturing & Materials Engineering
- Data Management & Systems Design
- Engineering Mathematics & Mechanics

3rd Year
Advanced engineering subjects

- Operations Research & Optimization
- Systems Modeling & Simulation
- Quality, Safety & Reliability
- Production Planning & Supply Chain
- Enterprise Systems & Data Analytics
- Facility Layout & Industrial Design
- Organizational Behavior & Human Systems
- Integrated System Design Projects

4th Year
Engineering Practices and Research Project

- Interdisciplinary Engineering Project
- Final Projects I & II
- Internship
- Bachelor thesis

Curriculum

No	Course name	Credit	No	Course name	Credit
1st semester			**2nd semester**		
1	MA1101 Mathematics I	4	1	TI1202 Engineering Drawing	2
2	FI1101 General Physics I	3	2	MA1201 Mathematics IIA (for Natural Sciences and Engineering)	4
3	KI1101 General Chemistry I	3	3	FI1201 General Physics IIA	3
4	WI1101 Pancasila	2	4	WI2001 Introduction to Engineering and Design	3
5	WI1102 Computational Thinking	2	5	WI2002 Artificial Intelligence and Data Literacy	2
6	WI1103 Introduction to Principles of Sustainability	2	6	WI2005 Indonesian Language	2
7	WI1111 Basic Physics Laboratory	1	7	TI1201 Elementary Biology	2
8	WI1112 Basic Chemistry Laboratory	1			
3rd semester			**4th semester**		
1	TI2001 Introduction to Industrial Engineering	3	1	TI2201 Statistics	3
2	TI2101 Probability Theory	2	2	TI2202 Operations Research I	3
3	TI2104 Introduction to Ergonomics	2	3	TI2203 Cost Analysis and Engineering Economics	4
4	TI2105 Materials and Manufacturing Process	3	4	TI2204 Work System Engineering	2
5	TI2106 Data Management	2	5	TI2205 Production Planning and Control	2
6	TI2091 Integrated System Design Practice I	1	6	TI2206 Industrial Automation	2
7	MA2021 Matrices and Vector Spaces	3	7	TI2092 Integrated System Design Practice II	1
8	WI2004 English	2	8	MS2050 Basic Engineering Mechanics	2

Curriculum

No	Course name	Credit	No	Course name	Credit
5th semester			**6th semester**		
1 2 3 4 5 6 7	TI3101 Quality Assurance and Control TI3102 Operations Research II TI3103 Systems Modeling TI3104 Occupational Health and Safety TI3106 Information Systems Analysis and Design WI2024 Organisasi dan Manajemen Perusahaan Industri (OMPI) TI3093 Integrated System Design Practice III	3 3 3 2 3 2 1	1 2 3 4 5 6	TI3202 Supply Chain System TI3203 Systems Simulation TI3205 Facility Layout Design TI3206 Enterprise System and Data Analytics TI3207 Organizational Behavior TI3094 Integrated System Design Practice IV	2 2 2 3 2 2
7th semester			**8th semester**		
1 2 3	TI4001 Interdisciplinary Engineering Project TI4091 Industrial Engineering Final Project I WI2003 Sports	2 2 1	1 2 3	WI2006 Civic Education WI201X Religion TI4092 Industrial Engineering Final Project II	2 2 4

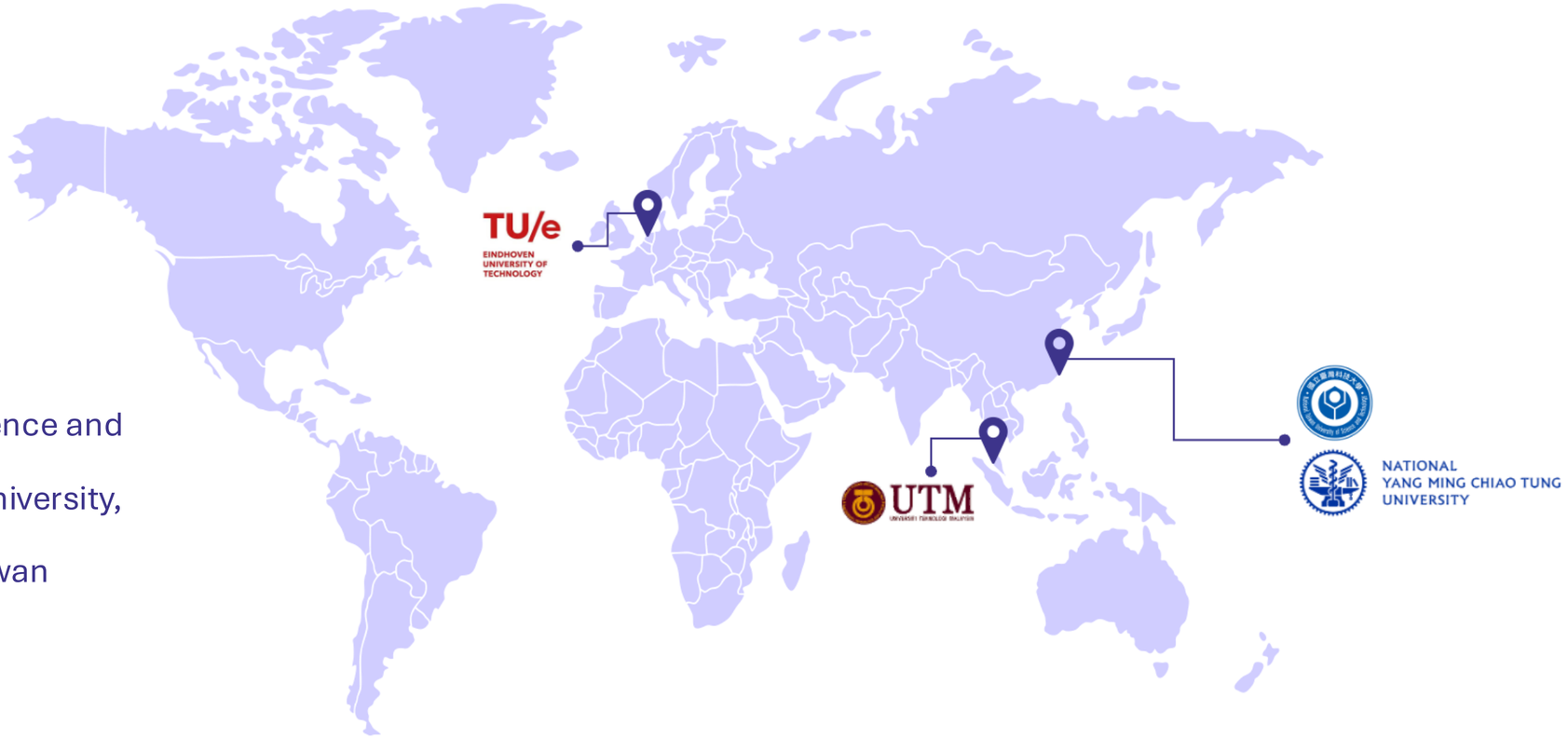
Learning Outcome

1. Ability to apply mathematics, science, information technology, and engineering principles in solving engineering problems within integrated systems.
2. Ability to design integrated systems that meet standards and realistic multi-aspect constraints, while considering the utilization of local and national resources as well as global perspectives.
3. Ability to design and conduct experiments, and to analyze and interpret data to support decision-making.
4. Ability to identify, formulate, analyze, and solve complex engineering problems in integrated systems using analytical, computational, or experimental approaches.
5. Ability to select and utilize modern methods, skills, and engineering tools necessary for performing industrial engineering activities.
6. Ability to communicate effectively with diverse audiences.
7. Ability to plan, execute, and evaluate tasks in accordance with specified criteria.
8. Ability to function effectively in cross-disciplinary and cross-cultural teams.
9. Ability to take responsibility and adhere to professional ethics in solving industrial engineering problems.
10. Ability to independently acquire new knowledge as needed, including accessing relevant information on current issues.

Partnership program

Short Course and Student Exchange Program

- National Taiwan University of Science and Technology, Taiwan
- National Yang Ming Chiao Tung University, Taiwan
- Universiti Teknologi Malaysia, Taiwan
- TU Eindhoven, Netherlands



Estimation of education cost

No	Program	Estimated education costs* (ITB)	Estimated education costs per semester** (Outbound)
1	Exchange program (1 semester at National Taiwan University of Science and Technology, National Yang Ming Chiao Tung University, Taiwan)	Rp 450.000.000	NT$ 45,000 – 55,000
2	Exchange program (1 semester at Universiti Teknologi Malaysia, Malaysia)	Rp 450.000.000	MYR 7,500 - 11,000
3	Exchange program (1 semester at TU Eindhoven, Netherlands)	Rp 450.000.000	EUR 6,000 - EUR 9,000

** Cost estimates may differ due to variations in the Institution Development Donation and living costs.*

*** Cost estimates may differ due to variations in flight ticket prices, settlement costs, and living costs.*

Career pathways

Industry domains	Typical roles
Manufacturing & Operations	Process Engineer, Quality Engineer, Operations Engineer
Digital & Data Systems	Data Analyst, Industrial Data Scientist, Business Intelligence Analyst
Supply Chain & Logistics	Supply Chain Analyst, Logistics Planner, Operations Planner
Research & Innovation	R&D Engineer, Research Assistant, Innovation Specialist
Business & Consulting	Management Trainee, Technology Consultant

Why IUP (vs Regular Program)?

100% English taught

Structured international exposure

Project & research driven

Global-ready

“Studying Industrial Engineering at FIT ITB prepared me not only to understand systems, but to improve them.”

The multidisciplinary and project-based learning approach helped me develop strong analytical thinking, data skills, and problem-solving abilities. I learned how to look at problems from technical, managerial, and sustainability perspectives.
Today, I work in a fast-paced global company, collaborating with international teams and handling complex projects with confidence. The adaptability, communication skills, and systems thinking that I gained at FIT ITB continue to be the foundation of my professional growth.

Regina Marvella, Associate at BCG (Indonesia), Industrial Engineering Alumni, FIT ITB