

Study Program: Industrial & Systems Engineering

Description: Industrial and Systems Engineering (Industrial Engineering) is an interdisciplinary engineering science that uses mathematical, physical, and social sciences, together with the principles and methods of engineering analysis and design to specify, predict, and evaluate the industrial systems and processes. Industrial and Systems Engineer will deal with the components of system resources such as material, man, machine, organization, information, and energy. Industrial and Systems Engineers are able to create new systems, processes or situations for the useful coordination of the resources. They deliver the improvement and optimization of systems based on cost, time, quality, productivity, and efficiency.

Students in this degree program will receive the necessary competences for the development of factory either product- or service-based processes. The factory may include automotive or aircraft industries that may involve design-manufacturing-assembly-maintenance, computing-information based industries, medical-health technology-based business, Internet Of Things, etc. The term Industrial and Systems Engineering has known worldwide as an interdisciplinary approach to the design, development, and optimization of complex systems where the synergy of man, machine, material, organization, information and energy are involved.

Field of Studies: Product Design • Production Engineering • Human Factors and Ergonomics • Sociological and Psychological technical system • Automation Technology • Big Data Analytics • Machine Learning • Maintenance Engineering • Supply-Chain • Occupational Safety and Health • Systems Engineering • Quality Control Engineering and Assurance • Operations Engineering • Manufacturing Execution Systems

General Information:

Legal Base / Accreditation:	SK DIKTI No. 425/E/O/2014
Duration of Study:	4 years (8 semester)
Academic Year:	2 semesters (even + odd) Even Semester: February - July Odd Semester: August - January
Academic weeks/semester:	16 (14 academics + 2 exams)
SKS ¹ per semester:	Max. 24
SKS per study:	144-160
Duration of a lecture:	50 minutes
Number of students per subject:	16-32
Language of Instruction:	English
Academic Degree:	Indonesia: Sarjana Teknik – S.T. (S1) International: Bachelor of Science (B.Sc)
Tuition Fee/semester:	Rp. 29.900.000
Online Application:	https://pmb.iuli.ac.id

¹ SKS: 1 SKS (preparation, lecture, exercises)

Study Program Description



Academic Year 2022/2023 – Bachelor Degree Programs

Structure of a study:

1	2	3	4	5	6	7	8
	Semester 1-6: Academic Education (see curriculum), OFSE (Oral Final Study Examination)						
	Semester 7: Research Semester (abroad for Double Degree)						
	Semester 8: Thesis Defense, Graduation						

Score System:

Grade Letter	Grade Wording	IULI	Indonesian Grade	Germany Grade	Grade Descriptions	Student Representation
A	Excellent	86-100	4	1	Outstanding Performance	10%
B	Good	71-85	3.0-3.9	2	Performance is considerably higher than the average requirements	25%
C	Satisfactory	56-70	2.0-2.9	3	Performance meets the average requirements	30%
D	Poor	46-55	1.0-1.9	4	Performance is poor and likely to lead to failure	25%
F	Fail	<45	0	5	Performance does not meet the minimum criteria. Considerable further work is required	10%

Contacts:



Dr. Ir. Prianggada Indra Tanaya, MME

Head of Industrial Engineering (INE)

prianggada.itanaya@iuli.ac.id

+62-878-4403-3021

Study Program Description



Academic Year 2022/2023 – Bachelor Degree Programs

Curriculum: in SKS

University Compulsory Subjects		Semester									
			1	2	3	4	5	6	7	8	Total
1	English	ENGL	2	2	2	2	1	1			10
2	Computer Network & IT Security	CNIS	2								2
3	Applied Statistics	MATH		2							2
4	Research Methodology	RESM		2							2
5	Environment Sciences	ENVI			2						2
6	Civics	CIVI				2					2
7	Ethics and Religious Philosophy	ETRP					2				2
8	Innovation & Product Development	PROD					2				2
9	E-Commerce	ECOM						2			2
10	Indonesian Language & Culture	IDLC						2			2
11	Pancasila	PANC						2			2
12	Oral Final Study Examination (OFSE)	OFSE						0			0
13	Research Semester	RESS							6		6
14	Elective : Internship / Project	INSP								3	3
15	Thesis / Thesis Defence	THES								6	6
Total			4	6	4	4	5	7	6	9	45

Engineering Faculty Compulsory Subjects		Semester									
			1	2	3	4	5	6	7	8	Σ
1	Introduction to Engineering	IENG	1								1
2	Chemistry	CHEM	2								2
3	Material Science	MATS	2								2
4	Engineering Mathematics 1,2	MATH	3	3							6
5	Physics & Laboratory 1,2	PHYS	3	3							6
6	Algorithm, Programming 1, 2	PROG	3	3							6
7	Electrical Engineering & Lab 1, 2	ELEE	3	3							6
8	Engineering Drawing / CAD 1	ENDR	3								3
9	Statics and Mechanics of Materials	MECH		4							4
10	Manufacturing Process	MFPR		2							2
11	Applied Mathematics	MATH			3						3
12	Metrology and Quality Control	MEQC			2						2
15	System Design 1, 2	SYSD					3	3			6
Total			19	18	5	0	3	3	0	0	48

Version: 2021_9 | Editor: Prianggada Indra Tanaya



Federal Ministry
of Education
and Research

Coordinator



PO Box 150, BSD CPA 15330
Tel. +62 21 50588000
+62 852 12318000
info@iuli.ac.id; www.iuli.ac.id

IULI – Eco Campus, The Breeze
Jl. BSD Grand Boulevard
BSD City 15345
Island of Java

Study Program Description



Academic Year 2022/2023 – Bachelor Degree Programs

INE - Department Compulsory Subjects			Semester								Σ	
			1	2	3	4	5	6	7	8		
1	Machine Elements	MELM			3							3
2	Assembly & Manufacturing Support Technology	AMST			2							2
3	Operation Management	OPMT			2							2
4	Cost Accounting	COAC			3							3
5	Manufacturing Processes * (Laboratory)	MFPL			2							2
6	Ergonomics & Human Factor Engineering	EHFE				3						3
7	Production Planning & Inventory Control	PPIC				2						2
8	Material & Metal Forming	MMFR				3						3
9	Electric Machines & Drives	ELMD				3						3
10	Engineering Management	EMGT				2						2
11	Electro-Pneumatics & Hydraulics	PNEU				2						2
12	Human Resource Management	HRMT				3						3
13	Innovation & Product Development	PROD					2					2
14	Industrial Sociology	INSY					2					2
15	Industrial Psychology	INPY					2					2
16	Operation Research	OPRS					3					3
17	Robotics & Automation 1, 2	ROBA					2	2				4
18	Engineering Economy	ECON					2					2
19	System Modeling & Simulation	SYMS						3				3
20	Logistics & Supply Chain Management	LSCM						3				3
21	Information System Design & Analysis	ISDA						3				3
22	Electives (Industrial Engineering) 1, 2, 3	ELEC				2	2	2				6
	Department		0	0	12	20	15	13	0	0		60
	Faculty		19	18	5	0	3	3	0	0		48
	University		4	6	4	4	5	7	6	9		45
	Total		23	24	21	24	23	23	6	9		153

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Academic Year 2022/2023 – Bachelor Degree Programs

Elective Courses			
	Subjects		SKS
1	Industrial Internet of Things	ILOT	2
2	Machine Learning	MCLG	2
3	Jigs and Fixtures	JIGF	2
4	Theory of Constraint	TOCT	2
5	Flexible Manufacturing Systems	FMFS	2
6	Shop Floor Control	SFCN	2
7	Manufacturing Execution Systems	MESY	2
8	Maintenance Management Systems	MMES	2
9	Design for Manufacturing	DSFM	2

Extra Curricula		Sem	1	2	3	4	5	6	7	8	
1	German Language 1	GERM	2	2	2	2	2	2			12
2	German Language 2	GERM	2	2							4
3	Mandarin	MAND	2	2	2	2	2		2		12
4	Business Arabic	ARAB	2	2	2	2	2		2		12