

## STUDY PROGRAM

# INDUSTRIAL ENGINEERING

## COURSE OUTLINE

Industrial Engineering is an interdisciplinary engineering science with respect to manufacturing/production engineering, management, information engineering and technology, and human factors. Industrial Engineerings determine the effective method to use industrial resources such as machines, energy, information, organization, and human, to make right products and/or services at a right time and right quality with right cost.

Student of this degree program will receive the necessary competences for the development of industrial systems related with products and services process businesses, industrial engineering management and accounting, information technology knowledge, human related factors within a holistic industrial system. They learn starting from abstract idea of products or services, setting up design and production facilities, quality engineering, uptill the products being rolled out and absorb by the market. They establish as a system wide thinking within production process business.

## FIELDS OF ACTIVITIES

Industrial engineers determine the most effective ways to use the basic factors of production—people, machines, materials, information, and energy – to make a product or provide a service. They are concerned primarily with increasing productivity through the management of people, methods of business organization, and technology.

### Area of Works:

- Manufacturing/Production System Design, Analysis, and Development
- Human Factor in Engineering
- Integration of Manufacturing/Production System through Information Technology
- Industrial Product Design and Development
- Industrial Economic and Management
- Performance Measurement, Analysis and Synthesis of Industrial Systems
- Energy Conservation of Factory Environment
- Industrial System Maintenance and Management
- Industrial System Engineering



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# CURRICULUM 2017-2018

Date/ Rev : 08 AUGUST 2017/ Rev. 08  
 Program : Bachelor  
 Valid : Batch 2017-2018

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SUBJECTS									
University Compulsory Subjects	1	2	3	4	5	6	7	8	Total
English	2	2	2	2	1	1			10
Computer Network & IT Security	2								2
Applied Statistics		2							2
Research Methodology		2							2
Environment Sciences			2						2
Civics				2					2
Ethics and Religious Philosophy					2				2
Innovation & Product Development					2				2
E-Commerce						2			2
Indonesian Language & Culture						2			2
Pancasila						2			2
Oral Final Study Examination (OFSE)						0			0
Research Semester							6		6
Internship / Project								3	3
Thesis / Thesis Defense								6	6
<b>Total</b>	<b>4</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>7</b>	<b>6</b>	<b>9</b>	<b>45</b>
Engineering Faculty Compulsory Subjects	1	2	3	4	5	6	7	8	Total
Introduction to Engineering	1								1
Chemistry	2								2
Material Science	2								2
Mathematics 1, 2	3	3							6
Physics & Laboratory 1, 2	3	3							6
Algorithm, Programming 1, 2	3	3							6
Electrical Engineering & Laboratory 1, 2	3	3							6
Engineering Drawing / CAD 1 *	3								3
Statics and Mechanics of Materials *		4							4
Manufacturing Process *			2						2
Applied Mathematics			3						3
Metrology and Quality Control			2						2
Computer Aided Design - CAD 2 **			0						0
Engineering Economy ***					0				0
System Design 1					3				3
Engineering Management ***						0			0
<b>Total (Exclude: ** COS, ** ELE, *** INE)</b>	<b>20</b>	<b>16</b>	<b>7</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>46</b>
Industrial Engineering Compulsory Subjects	1	2	3	4	5	6	7	8	Total
Machine Elements					3				3
Pneumatics & Hydraulics						3			3
Electronic Devices & Circuits 1, 2			2	2					6
Electric Machines Drives						3			3
System Modeling & Simulation						3			3
Ergonomics & Human Factor				2					2
Production Planning & Inventory Control				2					2
Marketing Management 1, 2			2	2					4
Psychology					2				2
Logistics & Supply Chain Management						3			3
Operations Management			2						2
Business Management 1, 2			2	2					4
Economics 1, 2			2	2					4
Accounting 1, 2			2	2					4
Corporate Finance					4				4
Operations Research					3				3
Human Resources Management 1				3					3
Law 1, 2				2	2				4
Management Information Systems (MIS)						2			2
Elective Subjects						2			2
<b>Total</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>19</b>	<b>14</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>61</b>
<b>Total 1, 2, 3</b>	<b>24</b>	<b>22</b>	<b>23</b>	<b>23</b>	<b>22</b>	<b>23</b>	<b>6</b>	<b>9</b>	<b>152</b>
Extra Curricular	1	2	3	4	5	6	7	8	Total
German Language	2	2	2	2	2	2			12
<b>Total</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>12</b>

Subject to change

The actual implementation follows the internal arrangements & policy of the Department & Faculty

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