International University Liaison Indonesia

IULI

STUDY PROGRAM :

MECHANICAL ENGINEERING

COURSE OUTLINE

Mechanical engineering is one of the largest, broadest, and oldest engineering disciplines. It is concerned with the responsible development of products, processes, and power, whether at small scale or at the large scale, complex systems. Mechanical engineering principles and skills are needed at some stage during the conception, design, development, and manufacture of every human-made object with moving parts. Many innovations crucial to our future will have their roots in the world of mass, motion, forces, and energy—the world of mechanical engineers.

All of the educational programs in the department prepare students for professional practice in an era of rapidly advancing technology. They combine a strong base in the engineering sciences (mechanics, materials, fluid and thermal sciences, systems and control) with project-based laboratory and design experiences. All strive to develop independence, creative talent, and leadership, as well as the capability for continuing professional growth.

Mechanical engineers use the principles of energy, materials, and mechanics to design and manufacture machines and devices of all types. They create the processes and systems that drive technology and industry.

Mechanical engineers create products, machines, and technological systems for the benefit of society. Building on a foundation of physical science, mathematics, and an understanding of societal needs and responsibilities, they develop solutions across a wide range of fields from energy to medical devices, manufacturing to transportation, consumer products to environmental compatibility. The bachelor degree in Mechanical Engineering at IULI exposes each student to intellectual and practical experiences that form a basis from which to develop solutions, and provides an environment that allows for the accumulation of knowledge to extend the domain within which solutions can be formulated.

FIELDS OF ACTIVITIES

The career paths of mechanical engineers are largely determined by individual choices, a decided advantage in a changing world Mechanics, energy and heat, mathematics, engineering sciences, design and manufacturing form the foundation of mechanical engineering. Mechanics includes fluids, ranging from still water to hypersonic gases flowing around a space vehicle; it involves the motion of anything from a particle to a machine or complex structure.

Graduates of the program have many professional options and opportunities, from entry-level work as mechanical engineers to graduate studies in either an engineering discipline or in another field where a broad engineering background is useful.

Mechanical engineers typically do the following:

- Analyze problems to see how mechanical and thermal devices might help solve the problem
- Design or redesign mechanical and thermal devices using analysis and computer-aided design
- Develop and test prototypes of devices they design
- Analyze the test results and change the design as needed
- Oversee the manufacturing process for the device

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CURRICULUM 2017-2018

Date/ Rev : 05 JANUARY 2017/ Rev. 07
Program : Bachelor
Valid : Batch 2016-2019

STUDY PROGRAM : MECHANICAL ENGINEERING

SUBJECT	1	2	3	4	5	6	7	8	Total
University Compulsory Subjects									
English	2	2	2	2	1	1			10
Fundamentals of Computer Science	2								2
E-Commerce						2			2
Environmental Sciences			2						2
Innovation and Product Development			2						2
Statistics & Probability^				2					2
Research							6		6
Research Methodology						2			2
Ethics and Religious Philosophy^					2				2
Civics^				2					2
Indonesian Language and Culture^						2			2
Pancasila^		2							2
Oral Final Study Examination (OFSE)^							0		0
Elective : Internship / Project								3	3
Thesis								6	6
Total	**4**	**4**	**6**	**6**	**3**	**7**	**6**	**9**	**45**
Faculty Compulsory Subjects									
Applied Chemistry & Material Science	3								3
Calculus & Linear Algebra	3	3							6
Physics & Laboratory	4	4							8
Algorithms, Programming & Data Structure	3	3							6
Technical Drawing	3								3
Manufacturing Processes & System		2							2
Applied Mathematics			3						3
Elective in Engineering Science				2					2
Engineering Economy					2				2
Engineering Management						2			2
Total	**16**	**12**	**3**	**2**	**2**	**2**	**0**	**-**	**37**
Department Compulsory Subjects									
Introduction to Mechanical Engineering	1								1
Industrial Electronics & Laboratory	3	3							6
Statics & Mechanics of Materials		4							4
Computer Aided Design (CAD)			3						3
Machine Elements			3						3
Manufacturing Processes Laboratory			2						2
Thermo-Fluid Science			2	2					4
Material & Metal Forming				3					3
Computer Aided Manufacturing (CAM)				3					3
Kinematics & Dynamic of Machines				3					3
Control Technique			3						3
Advanced Machine Element				4					4
Assembly & Manufacturing Support Technique					2				2
Quality Assurance					3				3
Mechanical Vibration					3				3
Introduction to Mechatronics					2				2
Mechanical Engineering System Design					3	3			6
Computer Aided Engineering (CAE)						3			3
Pneumatics & Hydraulics						3			3
Elective Subjects (*)					6	6			12
Total	**4**	**7**	**13**	**15**	**19**	**15**	**0**	**0**	**73**
Total 1, 2, 3	**24**	**23**	**22**	**23**	**24**	**24**	**6**	**9**	**155**
Extra Curricular									
German Language	2	2	2	2	2	2			12
Total	**2**	**2**	**2**	**2**	**2**	**2**	**0**	**0**	**12**

* subject to change
^ the actual implementation follows the internal arrangements & policy of the Department & Faculty

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