1. Description of the Mechanical Engineering Course

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

DAAD Federal Ministry of Education and Research
Coordinator TECHNISCHE UNIVERSITÄT ILMENAU
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

2. Qualification system in in Indonesia

2.1 General

IULI's bachelor's study program in Mechanical Engineering can be completed after taking a minimum of 144 credit hours (Satuan Kredit Semester / SKS), offered in eight regular semesters.

An academic year at IULI consists of two regular semesters, plus optional short semester(s). The first regular semester starts in July and ends in December. The second semester starts in January and ends in June. The academic activities within a semester takes 16 weeks.

In a regular semester, 1 SKS of a course is equivalent to 1 hour lecturing, 1 hour structured learning (tutorial, homework or field trip) and 1 hour independent learning per week. Therefore, a student may enroll for between 20 and 24 SKS in each of semesters 1, 2, 3, 4, 5, and 7.

One semester is equivalent to 30 ECTS (European Credit Transfer System) or 1 SKS is approximately equivalent to 1,25 ECTS.

2.1. Scores (Refer to the Academic Regulations)

Grade Letter	Grade Wording	IULI	Indonesian Grade Points (GP)	Germany	Grade Description	Students represen-tation
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 – 59	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%

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