

STUDY PROGRAM

MECHATRONICS ENGINEERING

COURSE OUTLINE

Mechatronics is an interdisciplinary engineering science with respect to electrical engineering / electronics, computer science and mechanical engineering. The term mechatronics has spread worldwide and has become a trademark for an interdisciplinary approach to the development, production and marketing of complex system products.

Students in this degree program will receive the necessary competences for the development of mechatronic systems in the automotive industry, manufacturing, medical devices technology, among others.

Further, important application fields of mechatronics are today biomechatronics and micro mechatronics / microsystems technology. Our partner universities (e.g. Technische Universitaet Ilmenau) are focusing in these mechatronic system designs. They have established a bridge to the life sciences and to micro and nanotechnology, which rely on interdisciplinary and systems thinking.

FIELDS OF ACTIVITIES

- Precision engineering equipment and mechanical engineering
- Measurement, control and regulation technology
- IT and electronics industry
- Microsystems Technology and Nanotechnology
- Automation Technology
- Medical
- Biomechatronics
- Automotive supply industry



Photo: International University Liaison Indonesia

CURRICULUM 2017-2018

Date/ Rev : 05 JANUARY 2017/ Rev. 07
 Program : Bachelor
 Valid : Batch 2017-2018

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SUBJECT	1	2	3	4	5	6	7	8	Total
University Compulsory Subjects									
English	2	2	2	2	1	1			10
Computer Network & IT Security	2								2
E-Commerce						2			2
Environment Sciences			2						2
Innovation & Product Development					2				2
Applied Statistics		2							2
Research Methodology		2							2
Research Semester							6		6
Ethics and Religious Philosophy					2				2
Civics				2					2
Indonesian Language & Culture						2			2
Pancasila						2			2
Oral Final Study Examination (OFSE)						0			0
Elective : Internship / Project								3	3
Thesis / Thesis Defense								6	6
Total	4	6	4	4	5	7	6	9	45
Faculty Compulsory Subjects									
Applied Chemistry & Material Science	3								3
Engineering Mathematics 1, 2	3	3							6
Physics & Laboratory 1, 2	4	4							8
Algorithm, Programming 1, 2	3	3							6
Engineering Drawing	3								3
Manufacturing Process			2						2
Applied Mathematics			3						3
Engineering Economy					2				2
Engineering Management						2			2
Electrical Engineering & Laboratory 1, 2	3	3							6
Statics and Mechanics of Materials		4							4
Metrology and Quality Control			2						2
Total	19	17	7	0	2	2	0	0	47
Department Compulsory Subjects									
Introduction to Mechatronics Eng	1						1		1
Manufacturing Process Laboratory			2				2		2
Machine Elements			3				3		3
Thermo-Fluid Science			2	2			4		4
Kinematics and Dynamics of Machines				3			3		3
Electronic Devices and Circuits			2	2			4		4
Sensor and Instrumentation Techn.			3				3		3
Microcontroller Systems Interface				3			3		3
Control Techniques				3			3		3
Signals and Systems				3			3		3
Digital Signal Processing					3		3		3
Introduction to Telecom.					2		2		2
Power Electronics					3		3		3
Pneumatics and Hydraulics						3	3		3
Electric Machines & Drives						3	3		3
Mechatronics Systems Design					3	3	6		6
Elective Subjects (*)				2	4	4	10		8
Total	1	0	12	16	15	13	0	0	61
Total 1, 2, 3	24	23	23	22	22	22	6	9	153
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

File: ENG June 2017

Print Date: 19 June 2017, 200 exp