

Module Handbook

Module Name:	Measurement Methods
Module Level:	Bachelor
Abbreviation, if applicable:	FI2204
Sub-heading, if applicable:	
Courses included in the module, if applicable:	
Semester/term:	4/ Second Years
Module coordinator(s):	
Lecturer(s):	
Language:	Bahasa Indonesia
Classification within the curriculum:	General Studies / Major Subject / Elective Studies
Teaching format / class hours per week during the semester:	2 hours lectures
Workload:	2 hours lectures, 4 hours individual study and Laboratories work, 16 weeks per semester, and total 96 hours a semester
Credit Points:	2
Requirements:	FI110 Elementary Physics IA FI201 Elementary Physics IIA
Learning goals/competencies:	<p><i>Knowledge:</i></p> <ul style="list-style-type: none"> - ability to describe criteria for precise and accurate measurements - ability to distinguish signal conditioning for physical measurements <p><i>Skills:</i></p> <ul style="list-style-type: none"> - ability to apply various sensors for physical measurements - ability to design and arrange configuration for a physical measurement system - ability to analyze the accuracy of the data by means of statistical method - ability to integrate the physical measurement system and statistical method
Content:	<p><i>This course is offered to equipped students with knowledge of criteria for precise and accurate measurements; system calibration and error (static and dynamic); measurement indicator system (in analogue, digital and display), data storage; conversion component variable (bridge circuit, the measurement of resistance, inductance, capacitance, frequency and phase) ; system signal conditioning amplifier, differentiator, system integrators), technology sensor (sensor capacitive, resistive, magnetic, hall-effect, piezoelectric, strain gauge, piezoresistive, optical); sensor measurements (temperature, pressure, flow), data processing (distribution data, on average, regression), the technique of decision making</i></p>
Study/exam achievements:	Students are considered to be competent and pass if at least get 50% of examinations (mid-term test, final test, quizzes), homework, Research based learning.
Forms of Media:	Slides and LCD projectors, blackboards, lab.
Literature:	<ol style="list-style-type: none"> 1. Alan S Moris, Measurement and Instrumentation Principle, Butterworth Heinemann, 2001, ISBN: 0 7506 5081 8, 2. Philip R. Bevington and D. Keith Robinson, Data Reduction and Error Analysis for the Physical Sciences, McGraw-Hill, 2003

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