

## MODULE HANDBOOK

Course:	<b>Instrumentation System</b>
Module Level:	Undergraduate
Code:	FIE303
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	5 <sup>th</sup> / Third Year
Module Coordinator:	Dr. Riries Rulaningtyas, S.T., M.T.
Lecturer(s):	Dr. Riries Rulaningtyas, S.T., M.T. and Erwin Sutanto S.T., M.Sc.
Language:	Bahasa Indonesia
Classification within the curriculum:	<del>Compulsory Course</del> / Elective Course
Teaching format / class hours per week during semester:	2 hours of lectures (50 min / hour)
Workload:	2 hours of lectures, 2 hours of structural activities, 2 hours of individual study, 13 weeks per semester, and total of 78 hours per semester ~ 2.6 ECTS*
Credit Points:	2
Requirement(s):	(FIE 201) Analog Electronics, (FIE 204) Digital Electronics and (FIT 202) Mathematical Physic II
Learning Goals/Competences:	<p><b>General Competence (Knowledge):</b>            Demonstrate knowledge of basic principle of Instrumentation System, and understande of common practice on Industrial Instrumentation System.</p> <p><b>Specific Competence :</b></p> <ol style="list-style-type: none"> <li>1. Understand the principle of common sensors,</li> <li>2. Know common actuators,</li> <li>3. Demonstrate an ability to plan a basic control system,</li> <li>4. Design and develop a instrumentation system by applying laws of physics,</li> <li>5. Understand the principle of instrumentation's calibration and maintenance.</li> </ol>
Contents:	This course discusses the supporting components on Instrumentation System, principles of common industrial sensors, how to display and processing signals on instrument's measurement, common actuators and power supply, the maintenance and calibration of instrumentation system.
Soft Skill Attribute:	Effort and ethic
Study/Exam Achievements:	<p>Students are considered competent and eligible to pass the course upon obtaining at least 40 of maximum mark of the exams (midterm and final exams), structured activity (group discussion).            Final score is calculated as follow: 20% assignment +10% (soft skill) + 35% midterm test + 35% final exam</p> <p>Final grade is defined as follow:            A : 75 – 100</p>

	AB : 70 - 74.99 B : 65 - 69.99 BC : 60 - 64.99 C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99
Forms of Media:	Powerpoint slides, LCD projectors and whiteboards
Learning Methods:	Lecture, assessments and group discussion
Literature(s):	<ol style="list-style-type: none"> <li>1. Tony R. Kuphaldt, 2016, <i>Lessons In Industrial Instrumentation</i>, Creative Commons Attribution 4.0 International Public License,</li> <li>2. <a href="http://www.ibiblio.org/kuphaldt/socratic/sinst/book/liii_2v20.pdf">http://www.ibiblio.org/kuphaldt/socratic/sinst/book/liii_2v20.pdf</a></li> <li>3. William C. Dunn, 2005, <i>Fundamentals of Industrial Instrumentation and Process Control</i>, Mc Graw Hill,</li> <li>4. Buckey, T, et.al, 1985, <i>Instrument Maintenance and Operation for Laboratory Assistant</i>, International Development Program of Australian Universities and College Limited (IDP), Canberra.</li> <li>5. Jain, R.K. 1983, <i>Mechanical and Industrial Measurements</i>, 5th revised and Enlarged Edition, Khanna Publishers, Delhi.</li> </ol>
Notes:	*Total ECTS = {(total hours workload × 50 min) / 25 hours Each ECTS is equals with 25 hours.