

UNDERGRADUATE PROGRAM IN ELECTRONICS AND INSTRUMENTATION
DEPARTMENT OF COMPUTER SCIENCE AND ELECTRONICS
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
UNIVERSITAS GADJAH MADA

Module name	Sensor and Transducer	
Module level	Undergraduate	
Code	MII-3819	
Courses (if applicable)	Sensor and Transducer	
Semester	Odd (Ganjil)	
Contact person	R. Sumiharto, S.Si., M.Kom	
Lecturer	R. Sumiharto, S.Si., M.Kom	
Language	Bahasa Indonesia	
Relation to curriculum	Undergraduate degree program, mandatory, 5 th semester	
Type of teaching, contact hours	Lectures, < 60 students, 180 minutes	
Workload	<ol style="list-style-type: none"> 1. Lectures: 3 x 50 = 150 minutes (2 hour and 30 minutes) per week. 2. Exercises and Assignments: 3 x 50 = 120 minutes (2 hours and 30 minutes) per week. 3. Private study: 3 x 60 = 180 minutes (3 hours) per week. 	
Credit points	3 credit points (sks)	
Requirements according to the examination regulations	A student must have attended at least 75% of the lectures to sit in the exams	
Mandatory prerequisites	MII 2809	
Learning outcomes and their corresponding PLOs	<p>After completing this module, a student is expected to:</p> <p>CO-1 Students understand the basic concepts of sensors and transducers.</p> <p>CO-2 Students understand the characteristics of each sensor and transducer device.</p> <p>CO-3 Students are able to design electronic circuits related to each sensor and transducer</p> <p>CO-4 Students are able to implement each sensor and transducer.</p> <p>CO-5 Students are able to analyze the needs of sensors and related transducers</p> <p>CO-6 Students are able to make simulations of a system that uses sensors and transducers.</p>	<p>PLO2</p> <p>PLO3</p> <p>PLO4</p> <p>PLO5</p>
Content	This course students will learn from the basic concepts of sensors and transducers, data acquisition and for each variation of physical quantities studied, their application to sensor networks and equally important about the calibration methodology of a system that uses a sensor and transducer.	

Study and examination requirements and forms of examination	<ul style="list-style-type: none"> • Quizzes (2) • Assignments (2) • Project • Mid-term examination • Final examination
Media employed	LCD, whiteboard, websites (eLisa).
Assessments and Evaluation	CO-1 Midterm exam, quiz, Project (total: 15%) CO-2 Midterm exam, assignment, project (total: 20%) CO-3 Midterm exam, project (total: 15%) CO-4 Final exam, quiz (total: 15%) CO-5 Final exam, assignment (total: 15%) CO-6 Final exam, project (total: 20%)
Reading List	Jon Wilson, <i>Sensor Technology Handbook</i> , Newnes, 2005. I. R. Sinclair, <i>Sensor and Transducers</i> , Newnes, 2001