

Module designation	EEM522 Mechatronic Systems Design		
Semester(s) in which the module is taught	7		
Person responsible for the module	M. B. Nugraha Megantara Pura		
Language	Indonesian		
Relation to curriculum	Elective 1		
Didactic methods	<ul style="list-style-type: none"> <li>- Lecture</li> <li>- Problem Based</li> <li>- Interactive Multimedia</li> </ul>		
Workload (incl. contact hours, self-study hours)	Total workload: 136.08 hours <ul style="list-style-type: none"> <li>- 35.01 hours of synchronous lecture.</li> <li>- 84.06 hours of self-study and assignments in the form of essays.</li> <li>- 17.01 hours related to exam and self study</li> </ul>		
Credit points	3 SKS (5.04 ECTS)		
Required and recommended prerequisites for joining the module	Required: <ul style="list-style-type: none"> <li>- CE631 Embedded System Design</li> </ul>		
Module objectives/intended learning outcomes	Course Learning Outcome	Related ELOs	
		ELO	Performance Indicator
	Students can design a complete mechatronic system that has certain usage specifications.	G	Understand the concept of electronics, analog systems, and digital systems in designing embedded systems.
Content	This course discusses the concept of sensors, actuators, interfaces, electro-mechanical systems control, data collection and data processing of mechatronic systems. Specifically, this course contains these topics: <ol style="list-style-type: none"> <li>1. Basic concepts of mechatronic systems</li> <li>2. Classification and application of sensors</li> <li>3. Signal Conditioning</li> <li>4. Data acquisition system &amp; Data presentation</li> <li>5. Actuators in mechatronic systems</li> <li>6. Programming of mechatronic systems &amp; device interfaces</li> <li>7. Electro-mechanical system control with PLC &amp; microcontroller</li> </ol>		

	<ol style="list-style-type: none"><li>8. Modeling system</li><li>9. Integration of mechatronic systems with data acquisition systems</li><li>10. Mechatronic system design</li></ol>
Examination forms	<ul style="list-style-type: none"><li>- Written test</li><li>- Product Based</li></ul>
Study and examination requirements	The total average score for the assignments (40%), midterm (25%), and final (30%) exams must be more than or equal to 55 (C).
Reading list	<ol style="list-style-type: none"><li>1. Bolton, William. "Mechatronics, Sixth Edition". Pearson Education. 2015</li></ol>