FI586 Nanomaterial

Module name:	Nanomaterial					
Module level, if applicable:	Undergraduate					
Code:	FI586					
Sub-heading, if applicable:	-					
Classes, if applicable:	-					
Semester:	7 th					
Module coordinator:	Endi Suhendi					
Lecturer(s):	Endi Suhendi					
Language:	Bahasa Indonesia					
Classification within the curriculum:	Elective course					
Type of Teaching	Contact hours per week during the semester	Class Size				
 Lecture (conceptual, contextual and problem-solving approaches, discussions and presentation). Structured activities (assignments based on conceptual, contextual and problem-solving approaches) Self-study (reading literature) 	1 hours 40 minutes	20				
Workload:	The total workload is 91 hours/5440 minutes (3.2 ECTS) per semester, consisting of 25 hour 20 minutes/1400 minutes lectures (0.82 ECTS), 28 hours/1680 minutes structured activities (0.98 ECTS) and 28 hours/1680 minutes self-study (0.98 ECTS) per week for 14 weeks, 11 hour 54 minutes/714 minutes for two exams and exam preparations (0.42 ECTS).					
Credit points:	3.2 ECTS					
Pre-requisites course(s):	FI121 Basic Physics I, FI340 Mechanics					
Course Learning Outcomes (CLO):	 After taking this course the students have ability to: CLO1. Explain the need for nanometer-sized materials. CLO2. Analyze the effect of size on material properties CLO3. Explain the synthesis and characterization of nanometer-sized materials. CLO4. Explain the concept, synthesis, characterization, and application of quantum dot material. CLO5. Explain the concept, synthesis, characterization, and application of nano wire. CLO6. Explain nanocomposite materials 					

	CLO7. Analyze the properties, synthesis, characterization, and application of the latest nanomaterials (carbon nanotubes and graphene).						
Content:	Knowledge of the need for nanometre-sized materials; Effect of size on material properties; properties, synthesis and application of quantum dot materials, nanowires, nanocomposites, and the latest nanomaterials (carbon nanotubes and graphene).						
		CLO	Assessment Object	Assessment Techniques	Weight		
Study/exam achievements:	1	1 - 6	Subject specific competences: - Assignment - Class activity - Midterm exam	Written Performance Written test	10% 10% 30%		
	2	7	Subject specific competences: - Presentation - Final exam	Performance Written test	20% 30%		
	Total 100% The final mark will be weight as follow:						
Forms of media:	Board, LCD Projector, Laptop/Computer						
Literature:	 Abdullah, M. (2009). Pengantar Nanosains, Penerbit ITB. Vollath, D. (2013). Nanomaterials: An Introduction to Synthesis, Properties and Applications, 2nd Edition, Wiley-VCH. Pokropivny, V., Lohmus, R., Hussainova, I., Pokropivny, A., & Vlassov, S. (2007). Introduction to Nanomaterials and Nanotechnology. Tartu University Press. 						

PLO and CLO mapping

	PLO1	PLO 2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO1 0	PLO11	PLO1 2
CLO1												
CLO2												
CLO3												
CLO4												
CLO5												
CLO6												
CLO7												