



UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF PHYSICS EDUCATION
PHYSICS STUDY PROGRAM

Colombo St. Number 1 Yogyakarta 55281
Telephone (0274)565411 Ext. 217, fax (0274) 548203
Web: <http://fisika.fmipa.uny.ac.id/>, E-mail: fisika@uny.ac.id

Bachelor of Physics

MODULE HANDBOOK

Module name:	Nanophysics
Module level, if applicable:	Bachelor Program
Code:	FSK6251
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	Odd
Module coordinator:	Wipsar Sunu Brams Dwandaru, M.Sc., Ph.D
Lecturer(s):	Wipsar Sunu Brams Dwandaru, M.Sc., Ph.D
Language:	Indonesian English
Classification within the curriculum:	Elective Course
Teaching format/class hours per week during the semester:	150 minutes lectures and 180 minutes structured activities per week.
Workload:	Total workload is 136 hours per semester, which consists of 150 minutes lectures, 180 minutes structured activities, and 180 minutes individual study per week for 16 weeks.
Credit points:	2 SKS (3.25 ECTS)
Prerequisites course(s):	-
Course Outcomes	CO1. To understand the concepts of Nanoscience and Nanotechnology. CO2. To understand the concepts of Nanomaterial synthesis. CO3. To understand the characterizations of Nanomaterials. CO4. To understand the application of Nanomaterials in daily life.

	CO5. To be able to do simple synthesis and characterizations of a Nanomaterial.																					
Content:	The content of this subject includes: a) Definitions of Nanosciene and Nanotechnology; b) Classification of Nanomaterials; c) Synthesis of Nanomaterials; d) Characterizations of Nanomaterials; e) Applications of Nanomaterials in daily life; f) simple project in synthesizing and characterizing a certain Nanomaterial.																					
Study/exam achievements:	<p>The achievements of this study are that students are able to understand various Nanomerials, which are advantegeous and applicable in daily life. Moreover, students are able to do simple synthesis and characterizations of a certain Nanomaterial.</p> <p>The final mark of the subject may be given as follows:</p> <table border="1"> <thead> <tr> <th>No.</th> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td rowspan="3">1</td> <td rowspan="3">CO1, CO2, CO3, CO4, and CO5</td> <td>a. Individual Assignment</td> <td>a. Presentation</td> <td>40%</td> </tr> <tr> <td>b. Group Assignment</td> <td>b. Project</td> <td>40%</td> </tr> <tr> <td>c. Final Exam</td> <td>c. Written</td> <td>20%</td> </tr> <tr> <td colspan="4">Total</td> <td>100%</td> </tr> </tbody> </table>	No.	CO	Assessment Object	Assessment Technique	Weight	1	CO1, CO2, CO3, CO4, and CO5	a. Individual Assignment	a. Presentation	40%	b. Group Assignment	b. Project	40%	c. Final Exam	c. Written	20%	Total				100%
No.	CO	Assessment Object	Assessment Technique	Weight																		
1	CO1, CO2, CO3, CO4, and CO5	a. Individual Assignment	a. Presentation	40%																		
		b. Group Assignment	b. Project	40%																		
		c. Final Exam	c. Written	20%																		
Total				100%																		
Forms of media:	Whiteboard, LCD Projector, Laptop/Computer																					
Literatures:	<p>A. Dwandaru, W.S.B. et al. 2019. Nanomaterial Graphene Oxide: Sintesis dan Karakterisasinya. Yogyakarta: UNY Press.</p> <p>B. Dwandaru, W.S.B. and Janah, N.M. 2018. Nanomaterial: Quantum Dot, Nanopartikel Perak, Graphene. Yogyakarta: UNY Press.</p>																					

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
CO1		✓							
CO2		✓							
CO3		✓							
CO4		✓							
CO5			✓						