



UIN SUNAN KALIJAGA YOGYAKARTA

FACULTY OF SCIENCE AND TECHNOLOGY

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Undergraduate Programme in Physics

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MODULE HANDBOOK

Module Name	Nano science and Nano Technology
Module level, if applicable	Bachelor
Code, if applicable	<u>FIS424059</u>
Subtitle, if applicable	-
Courses, if applicable	Composite Material (Material Komposit)
Semester(s) in which the module is taught	5 th (fifth)
Person responsible for the module	Dr. Asih Melati, M.Sc
Lecturer(s)	Dr. Asih Melati, M.Sc
Language	Indonesia
Relation to curriculum	Elective course in the third year (5 th semester) Bachelor Degree
Type of teaching, contact hours	150 minutes lectures and 120 minutes structured activities per week.
Workload	Total workload is 90.7 hours per semester, which consists of 100 minutes lectures per week for 14 weeks, 120 minutes structured activities per week, 120 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam
Credit points	3
Requirements according to the examination regulations	Create a project of science applications and minimum attendance 75 %
Recommended prerequisites	No prerequisites stated on
Module objectives/intended learning outcomes	<p>After completing this course, the students:</p> <p>CO 1. Mastering the theoretical concepts and main principles of classical physics and modern physics, as well as knowledge of technology based on physics and its application and integrating it with religion</p> <p>CO 2. Mastering mathematical, computational and instrumentation methods to solve physics problems and apply his knowledge to a broader field.</p> <p>CO 3. Able to formulate and analyse scientific studies and research related to physics</p> <p>CO 4. Master the basic principles of experimentation and physics measurement methods to formulate physical phenomena based on observation and data analysis</p>
Content	<ol style="list-style-type: none"> The principal and practice of Nano science and nano technology The fabrication of nano material The properties of nano material The fabrication of nano material The application of nano material The characterization and development of nano material The technology behind of the nano science

Study and examination requirements and forms of examination	The final mark will be weighted as follows:																																											
	<table border="1"> <thead> <tr> <th>NO</th> <th>Assessment methods (components, activities)</th> <th>Weight (percentage)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Final Examination</td> <td>40%</td> </tr> <tr> <td>2</td> <td>Mid-Term Examination</td> <td>30%</td> </tr> <tr> <td>3</td> <td>Class Activities : Quiz, Homework, etc.</td> <td>30%</td> </tr> </tbody> </table>	NO	Assessment methods (components, activities)	Weight (percentage)	1	Final Examination	40%	2	Mid-Term Examination	30%	3	Class Activities : Quiz, Homework, etc.	30%																															
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Media employed	White-board, Lcd Projector, e-learning (https://daring.uin-suka.ac.id/)																																											
Reading list	<ol style="list-style-type: none"> "Introduction to Nanoscience and Nanotechnology" by Chris Binns (Publisher: Wiley, 2010) "Nanotechnology: Principles and Practices" by Sulabha K. Kulkarni (Publisher: CRC Press, 2017) "Nanotechnology: Understanding Small Systems" by Ben Rogers, Jesse Adams, and Sumita Pennathur (Publisher: CRC Press, 2016) "Nanomaterials: Synthesis, Properties, and Applications" edited by A.S. Edelstein and R.C. Cammarata (Publisher: CRC Press, 2001) "Nanostructures and Nanomaterials: Synthesis, Properties, and Applications" edited by Guozhong Cao (Publisher: World Scientific Publishing Company, 2004) "Handbook of Nanoscience, Engineering, and Technology" edited by William A. Goddard III, Donald W. Brenner, Sergey Edward Lyshevski, and Gerald J. Iafrate (Publisher: CRC Press, 2007) 																																											

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10
CO 1		√		√					√	
CO 2		√		√					√	
CO 3		√		√					√	
			√	√					√	