

## 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:	Monte Carlo Method in Physics				
Module level, if applicable:	Bachelor Program				
Code:	FSK6359				
Sub-heading, if applicable:	-				
Classes, if applicable:	-				
Semester:	Even				
Module coordinator:	Wipsar Sunu Brams Dwandaru, M.Sc., Ph.D				
Lecturer(s):	Wipsar Sunu Brams Dwandaru, M.Sc., Ph.D				
Language:	Indonesian				
Language.	English				
Classification within the	Elective Course				
curriculum:	Licenve Course				
Teaching format/class hours	150 minutes lectures and 180 minutes structured activities per				
per week during the	week.				
semester:					
	Total workload is 136 hours per semester, which consists of				
Workload:	150 minutes lectures, 180 minutes structured activities, and				
	180 minutes individual study per week for 16 weeks.				
Credit points:	2				
Prerequisites course(s):	-				
	CO1. To understand the concepts of Monte Carlo method, especially in physics.				
Course Outcomes	CO2. To understand the methods of Monte Carlo methods, including random walks, kinetic Monte Carlo, and Monte Carlo simulation.				

	CO3. To know the strengths and weaknesses of different Monte Carlo methods.							
	CO4. To apply the Monte Carlo methods in selected physical problems.							
Content:	The content of this subject includes: a) Definitions of Monte Carlo methods, especially in physics; b) Random walks; c) Kinetic Monte Carlo; d) Monte Carlo simulations; f) Applications of the Monte Carlo methods in selected physical problems.							
	The achievements of this study are that students are able to understand various Monte Carlo methods including their application in physical problems.  The final mark of the subject may be given as follows:							
	111611	IIai IIIai K	or the subject may	be given as iollow	/S:			
Study/exam achievements:	No.	CO	Assessment Object	Assessment Technique	Weight			
Study/exam achievements:		CO1, CO2, CO3, and	Assessment	Assessment				
Study/exam achievements:	No.	CO1, CO2, CO3,	Assessment Object  a. Individual Assignment	Assessment Technique  a. Presentation b. Project	Weight 60%			
Study/exam achievements:  Forms of media:	<b>No.</b>	CO CO1, CO2, CO3, and CO4,	Assessment Object  a. Individual Assignment	Assessment Technique  a. Presentation b. Project c. Written  Total	<b>Weight</b> 60% 40%			

# **PLO and CO mapping**

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
CO1		<b>V</b>							
CO2		<b>V</b>							
CO3		<b>V</b>							
CO4			<b>V</b>						