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:	Nuclear Physics
Module level, if applicable:	Master Programme
Code:	FSK6226
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	4th
Module coordinator:	Drs. Yusman Wiyatmo, M.Si..
Lecturer(s):	Drs. Yusman Wiyatmo, M.Si.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory Course
Teaching format / class hours per week during the semester:	100 minutes lectures and 120 minutes structured activities per week.
Workload:	Total workload is 91 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes individual study per week for 16 weeks.
Credit points:	2 SKS (4.86 ECTS)
Prerequisites course(s):	-
Course Outcomes	After taking this course the students have ability to:

<table>
<tr><td></td><td>CO1. Analyze the structure of nucleus
CO2. Determine of binding energi
CO3. Analyze radioactivity
CO4. Analyze alpha, beta, and gamma decay
CO5. Analyze interaction of nuclear radiation with matter
CO6. Analyze nuclear reaction
CO7. Analyze the application nuclear radiation</td></tr>
<tr><td>Content:</td><td>This course discusses the basic concepts of nucleus structure, binding energy, radioactivity, interaction nuclear radiation with matter, alpha decay, beta decay, gamma decay, nuclear reaction, radio isotope and its application.</td></tr>
<tr><td>Study / exam achievements:</td><td>Attitude assessment is carried out at each meeting by observation and / or self-assessment techniques using the assumption that basically every student has a good attitude. The student is given a value of very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.

The final mark will be weight as follow:
<table>
<tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr>
<tr><td>1</td><td>CO2,
CO3
CO4
CO4
CO5
CO6
CO7</td><td>a. Individual
Assignment
b. Group
Assignment
c. Quiz
d. Mid
e. Final Exam</td><td>Presentation / written test</td><td>15%
15%

15%
25%
30%</td></tr>
<tr><td colspan="3"></td><td>Total</td><td>100%</td></tr>
</table></td></tr>
<tr><td>Forms of media:</td><td>Board, LCD Projector, Laptop/Computer</td></tr>
<tr><td>Literature:</td><td>A. Meyerhof. 2007. Introduction of Nuclear Physics
B. Yusman Wiyatmo. 2016. Fisika Nuklir dalam Telaah Klasik dan Kuantum. Yogyakarta: Pustaka Pelajar.
C. Landau, F.D & Lift Hits, E.M. 1977. Nuclear Structure. Science Direct.
D. Sutter, P. 2022. Radioactive Decay: Discovery, Process, and Causes. https://www.space.com/radioactive-decay.</td></tr>
</table>

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
CO1	✓	✓			✓			

CO2	✓	✓			✓			
CO3	✓	✓			✓			
CO4	✓	✓			✓			
CO5	✓	✓			✓			
CO6	✓	✓			✓			
CO7	✓	✓			✓			