



**UNIVERSITAS NEGERI YOGYAKARTA FACULTY OF MATHEMATICS
AND NATURAL SCIENCES DEPARTMENT OF MATHEMATICS
EDUCATION**

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Bachelor of Science in Biology

MODULE HANDBOOK

Module name:	Physics
Module level, if applicable:	Undergraduate
Code:	MKU6205
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	1 st
Module coordinator:	Dr. Pujiyanto
Lecturer(s):	Dr. Pujiyanto
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 90.67 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes self-study per week for 16 weeks.
Credit points:	2
Prerequisites course(s):	-
Targeted learning outcomes:	After taking this course, the students have the ability to:

	<p>CO1. Students are able to understand the basic principles and concepts of mechanics</p> <p>CO2. Students are able to understand the basic concepts of Vibrations and Waves</p> <p>CO3. Students are able to understand the laws of thermodynamics</p>
Content:	<p>This course discusses Newtonian concepts (force and motion), conservation of energy and momentum laws, fluids, physical and thermal characteristics of substances (thermodynamics), waves & optics, electricity, kinetic theory of gases and their application in the biological sciences</p>
Study/exam achievements:	<p>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.</p>

	The final mark will be weight as follow:				
	No	CO	Assessment Object	Assessment Technique	Weight
	1	CO2, CO3	Individual assignment and presentation	Observation	10%
	2	CO1, CO2, CO3,	a. Class participation (during discussion and working on the board) b. Quiz c. Assignment d. Mid-Term Examination	Observation Written test Written test Written test	10% 10% 20%
	3	CO3	Assignment	Written test	15%
	4	CO1, CO2, CO3	Final Examination	Written test	25%
	Total				100%
Forms of media:	Board, LCD Projector, Laptop/Computer				
Literature:	<ol style="list-style-type: none"> Davidovits, P. 2008. <i>Physics in Biology and Medicine</i> 3rd Edition. London: Academic Press Blomberg, C. 2007. <i>Physics of Life: The Physicist's Road to Biology</i>. London: Elsevier Giancoli, Douglas C. 2014. <i>Physics: Principle with application</i> alih bahasa Yuhilza Hanum (Edisi 5, Erlangga) Tipler, Paul A. 1991. <i>Fisika Untuk Sains dan Teknik</i> Jilid I, Edisi Ketiga. Alih Bahasa Lea Prasetio dan Rahmad W. Adi. Jakarta: Erlangga Serway, R.A., Jewet Jr., John W. 2003. <i>Physics for Scientist & Engineer</i>, Brooks Cole Young & Freedman, Sears Zemansky. 2008. <i>University's Physics</i>, Pearson Halliday, D. dan Resnick, R. (1984). <i>Fisika jilid I</i>. Terjemahan P. Silaban dan E. Sucipto. Jakarta: Erlangga Sutrisno, (1986). <i>Seri Fisika Dasar: Mekanika</i>. Bandung: ITB 				

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11
CO1									?		
CO2									?		
CO3									?		