UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND NATURAL SCIENCES

DEPARTMENT OF MATHEMATICS EDUCATION

Jalan Colombo Nomor 1 Yogyakarta 55281

Telepon: (0274) 565411 Pesawat 217, (0274) 565411 (TU); Fax. (0274) 548203

Laman: fmipa.uny.ac.id, E-mail: humas_fmipa@uny.ac.id

Bachelor of Education in Biology	**MODULE HANDBOOK**

Module name:	Laboratory Work in General Physics
Module level, if applicable:	Bachelor's Degree
Code:	BIO6207
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	Even
Module coordinator:	Team
Lecturer(s):	Team
Language:	Indonesian
Classification within the curriculum:	Common Ground of (Department Course)
Teaching format/class hours per week during the semester:	100 minutes of lectures, 120 minutes of structured activities, and 120 minutes of individual study per week
Workload:	
Credit points:	3 credits
Prerequisites course(s):	-
Program Learning Outcome(s)	PLO 4. Mastering basic Biology and other relevant knowledges with mathematics and natural sciences. PLO 7. Being able to do independent laboratory work and fieldwork
Targeted learning outcomes:	After taking this course, the students have the ability to: CO1. Understanding the meaning of measurement in physics and its uncertainty CO2. Understand the analysis of experimental data and the determination of uncertainties and the results of the experiment graph CO3. Understand how physics measuring devices work and be able to carry out measurements with these tools. CO4. Understand how physics measuring devices work and be able to carry out measurements with these tools. CO5. Make a practicum report CO6. Determine the density of objects CO7. Determine the speed and acceleration of objects that are

<table>
<tr><td></td><td>doing straight motion
CO8. Determine the system of equilibrium of forces acting on objects
CO9. Determine the coefficient of friction
CO10. Determine Young's modulus of a metal wire
CO11. Determine the massive relationship with Boyle's law
CO12. Determine the relationship between temperature and gas pressure
CO13. Determine the effect of boiling point of substances on boiling points
CO14. Determine the frequency of the vibrating source and the wave propagation rate on the string
CO15. Determine the wavelength of sound and the rate of sound propagation in the air column</td></tr>
<tr><td>Content:</td><td>This course mainly develops scientific and skill abilities, students learn about material on mechanics, heat, vibration, waves and sound. Before carrying out practicum, students study the measurement and uncertainty theory in measurement, statistical and graphical data analysis techniques, and are provided with the basics of using measurement tools. In practicum activities, students are required to report the results of their practicum activities by making practicum reports and following responses at the end of the semester.</td></tr>
<tr><td>Study/exam achievements:</td><td>The final mark will be weight as follows:
<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>CO1 to CO15</td><td>Observed attitudes, knowledge, and skills</td><td>Activity
Skill in practicum
Practicume report
Response</td><td>15%
30%
40%
15 %</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 and documents.</td></tr>
<tr><td>References:</td><td>Tim Fisika Dasar Jurusan Pendidikan Fisika FMIPA UNY (2014) Petunjuk Praktikum Fisika Dasar 1

Anjuran
Bevington, Philip R. , (1969), Data Reduction and Error Analysis for</td></tr>
</table>

	The Physical Sciences, Mc Graw – Hill, New York Paul A. Tippler, *Physics for Sceintists and Engineers (terjemahan) jilid* Erlangga, Jakarta (2001). Sears & Zemansky, University Physics (terjemahan) jilid 1, Erlangga, Jakarta (2002) Douglas C. Giancolli, Physics: Principles with Applications jilid 1 (terjemahan), Erlangga, Jakarta (1998).

PLO AND CO MAPPING

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12
CO 1				√			√					
CO 2				√			√					
CO 3				√			√					
CO 4				√			√					
CO 5				√			√					
CO 6				√			√					
CO 7				√			√					
CO 8				√			√					
CO 9				√			√					
CO 10				√			√					
CO 11				√			√					
CO 12				√			√					
CO13				√			√					
CO14				√			√					
CO15				√			√					