Module Description of Basic Physics

Module Name	:	Basic Physics
Module Level	:	Bachelor of Mathematics
Code, if applicable	:	23H02110702
Subtitle, if applicable	:	-
Courses, if applicable	:	Basic Physics
Semester(s) in which the module is taught	:	I (First Semester)
Module coordinator(s)	:	Prof. Dr. Paulus Lobo Gareso, M.Sc
Lecturer(s)	:	Team teaching of Basic Physics
Language	:	Indonesian Language (Bahasa Indonesia)
Relation to curriculum	:	This course is a compulsory course and offered in first semester
Type of teaching		Lecture and Small Group Discussion (SGD)
Contact hours	:	100 minutes lectures per week, 120 minutes structured activities per week, and 120 minutes independent study per week
Workload	:	Total workload is 90 hours per semester which consists of 26 hours for Learning and Teaching, 32 hours for Self-Study, and 32 hours for Structured Works.
Credit points	:	2 (3.2 ECTS)
Requirements according to the examination regulations	:	Students are required to attend at least 80% of the total meetings which is recorded via the attendance menu at https://sikola-v2.unhas.ac.id/, complete all mandatory assignments, and obtain permission from the lecturer to participate in the examination.
Recommended prerequisites	:	None
Module objectives/intended learning outcomes	:	Intended Learning Outcomes (ILO): ILO-1. A thorough understanding of the theoretical concepts of classical and quantum physics (Knowledge) ILO-2. Ability to demonstrate independent, high quality and measurable performance (Generic Skill 1) ILO-3. Ability to think critically, systematically, innovatively, with integrity, communicate effectively, and work independently or in teams using humanistic science and technology (Generic Skill 2) Course Learning Objectives (CLO): CLO-1. Students are able to analyze the laws of classical and modern physics using mathematical equations to obtain solutions to physics problems related to the concepts of quantities and units, kinematics and dynamics, work and energy, momentum, elasticity, oscillatory motion, fluids and heat (Knowledge)

		CLO-2. Students are able to demonstrate experiments to obtain data on physical phenomena in accordance with the procedures in the practicum diktat and relate the conclusions of observations to the application (Generic Skill 1) CLO-3. Students are able to describe the application of the concepts of mechanics, work and energy, momentum, elasticity, oscillation, fluid and heat in daily life, industry or technology utilization (Generic Skill 2)
Content	:	Students will learn about: 1. Magnitude, Unit and Dimension 2. Particle Kinematics 3. Particle dynamics 4. Work and energy 5. Linear momentum and collisions 6. Angular momentum and inertia 7. Elasticity 8. Harmonic Oscillator 9. Static Fluid 10. Dynamic Fluid 11. Temperature and Heat 12. Thermodynamics
Study and examination requirements	:	Study and examination requirements: 1. Students must attend 15 minutes before the class starts 2. Students must inform the lecturer if they will not attend the class due to sickness, an urgent need, etc. 3. Students must submit all class assignments before the deadline 4. Students must switch off/silent all electronic devices 5. Students must the attend the exam to get final grade
Exams and assessment formats	:	Assesment weight: Assignment (50%), Written Exam (50%) Assignments assess student's ability to apply concepts independently. The Written Exam assesses comprehension and synthesis of all materials discussed during the semester. Altogether, these components account for 100% of the final grade.
Reading list	:	Main: Halliday & Resnick, Fisika Jilid 1, Terjemahan (Erwin Sucippto & Pantur Silaban), Jakarta, Erlangga 1994 Support: Physics-FMIPA Lecturer Team, Basic Physics 1, First Edition, Makassar 2010
Last Updated	:	June 5th, 2023