

Module Handbook

Module name	Basic Physics 2
Module level, if applicable	Bachelor of Science
Code, if applicable	23H02110203
Subtitle, if applicable	-
Course, if applicable	-
Semester(s) in which the module is taught	2 nd (Even)
Person responsible for the module	Bansawang BJ
Lecturer	Lecturers Team for Basic Physics 2 General Course
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is a mandatory course and is offered in the 2 nd semester.
Type of teaching, contact hours	Teaching methods: [group discussion], [simulation], [case study], [collaborative learning], [problem-based learning]. Teaching forms: [lecture], [tutorial], [seminar], [practicum] CH : 08.00 - 16.00
Workload	For this course, students are required to meet a minimum of 90.67 hours in one semester, which consists of: - 26.67 hours for lectures, - 32.00 hours for structured assignments, - 32.00 hours for private study
Credit points	2 credit points (equivalent to 3.4 ECTS)
Requirements according to the examination	A student must have attended at least 75% of the lectures to sit on the final examination.

regulations	
Recommended prerequisites	Basic Physics 1
Module objectives/intended learning outcomes	After completing this module, students are able: Intended Learning Outcomes • ILO 1 : Students will have relatively deep understood in classical and basic quantum physics • ILO 4 : Students will have capability to operate the physical instrumentation in the laboratory and conduct experiments and interpret the result. Course Objectives: 1. Students will have the ability to learn electromagnetic field theory to solve problems in the field of science and technology. 2. Students will have the ability to handle electrical components in simple instrument devices Sub-CO ILO 1 $\Rightarrow$ CO-1 : Be able to apply addition, subtraction, scalar and vector multiplication operations to physical quantities ILO 1 $\Rightarrow$ CO-2 : Write and calculate the force and electric field of point charges as well as distributed charges ILO 1 $\Rightarrow$ CO-3 : Calculate the electric potential of various charge distributions and apply it to the capacitance of parallel-plate, cylindrical, and spherical capacitors ILO 1 $\Rightarrow$ CO-4 : Be able to define electric current and calculate power in relation to Joule's law ILO 1 $\Rightarrow$ CO-5 : Calculate the electric current in series, parallel, and combined resistor circuits using Kirchhoff's laws and loop analysis ILO 4 $\Rightarrow$ CO-6 : Explain and calculate how electric current can generate a magnetic field and vice versa, how a magnetic field can induce an electric current ILO 1 $\Rightarrow$ CO-7 : Calculate AC current, voltage, and impedance in resistor (R)-capacitor (C)-inductor (L) circuits

	ILO 4 ⇒ CO-8 : Being able to differentiate and calculate the velocity and properties of mechanical waves and electromagnetic waves in solid, liquid, and gas mediums ILO 4 ⇒ CO-9 : Differentiate the formation properties of images in concave and convex mirrors as well as lenses and calculate their respective magnifications ILO 4 ⇒ CO-10 : Be able to differentiate and calculate classical theories with modern theories (quantum theory and relativity)
Content	Students will learn about: 1. Electricity and Magnetism 2. Light and Optics 3. Modern Physics
Forms of Assessment	Assessment techniques: [observation], [participation], [performance], [written test] Assessment forms: [quiz], [midterm exam], [final term exam], [assignment], [report], [presentation] Assignment = 15%; Laboratory practice = 25%; Mid examination = 30%; Final examination = 30% CO 1 => ILO 1: 10% (Mid examination number 1) CO 2 => ILO 1: 10% (Mid examination number 2, 3) CO 3 => ILO 1: 10% (Question in assignment 1) CO 4 => ILO 1: 10% (Mid examination number 4) CO 5 => ILO 1: 10% (Question in assignment 2) CO 6 => ILO 4: 10% (Final examination) CO 7 => ILO 1: 10% (Final examination) CO 8 => ILO 4: 10% (Question in assignment 3) CO 9 => ILO 4: 10% (Question in assignment 4) CO 10 => ILO 4: 10% (Final examination)
Study and examination requirements and	Study and examination requirements: • Students must attend 15 minutes before the class starts. • Students must switch off all electronics devices. • Students must inform the lecturer if they will not attend the class due to sickness, etc.

forms of examination	• Students must submit all class assignments before the deadline. • Students must attend the exam to get the final grade. Form of examination: Written Exam
Media employed	LED, Whiteboard, Text book, Learning Management System (SIKOLA)
Reading list	1. Tim Pengajar Fisika Dasar II : Diktat Kuliah Fisika Dasar II , Jurusan fisika FMIPA UNHAS,Makassar 2. Renreng. H. A,1985: Asas-asas Ilmu Alam Universitas jilid II, LEPHAS, Makassar 3. Halliday. D and Resnick . R, 1992: “Fisika Jilid II” (terjemahan : P. Silaban dan E.Sucipto), Ed.3 Erlangga, Surabaya