MINISTRY OF EDUCATION AND CULTURE
UNIVERSITAS NEGERI SURABAYA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF PHYSICS
Ketintang Campus, Jalan Ketintang, C3 Building, Surabaya 60231
Website: https://pendidikan-fisika.fmipa.unesa.ac.id/, email: s1-pfis@unesa.ac.id

Undergraduate Programme of Physics Education **Module Handbook**

Module Name :	*Fisika Dasar II* Basic Physics II
Module level :	Bachelor degree/Undergraduate Programme
Course Code :	8420303066
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	2/First Year
Module coordinator(s)	
Lecturer(s):	Prof. Tjipto Prastowo, Ph.D. Meta Yantidewi, S.Si., M.Si.
Language:	*Bahasa Indonesia*
Classification within the curriculum:	Compulsory/ ~~Elective~~
Teaching format/class hours per week during the semester:	4 contact hours of lectures (Indonesia credit semester or sks*)
Workload :	4 x 50 minutes lectures, 4 x 60 minutes structured activity, 4 x 60 minutes individual activity, 14 weeks per semester, 180 total hours per semester ~ 6.36 ECTS**
Credit Point:	4 sks (6.36 ECTS)
Requirements:	Basic Physics I
Learning goals/competencies:	1. Demonstrating independent, creative and honest characters in doing student assignments, mid and final exams. 2. Mastering structured concepts of Classical and Modern Physics. 3. Mastering mathematical aspects as an effective tool for understanding physics better through physical modelling. 4. Being able to work individually and in a team, showing entrepreneurships, being awareness of environmental issues. 5. Demonstrating good behaviours towards religion and cultural values, and nationalities as well as performing student assignments professionally.
Content	Basic Physics 2 discusses materials in physics related to the concepts of electricity, magnetism, waves and geometrical optics. Detailed topics in class discussions include electric field, Coulomb interaction, Gauss law, electric potential, electric potential energy, conservation of energy, capacitance and dielectric, electric current and resistance (Ohm law), electric circuit (Kirchoff law), magneitc field (Biot-Savart law), sources of magnetic field, Faraday law, elektromagnetic induction, alternating current,

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	electromagnetic waves, reflection and refraction (Snellius law), mirrors and lenses, optical devices (eyes, lup, microscope, telescope).
Attribute Soft skill:	Scientific report, public speaking, and team work
Study/exam achievements:	Students are considered to complete the course and pass if they obtain at least 40% of maximum final grade. The final grade (NA) is calculated based on the following ratio: <table><tr><th>Assessment Components</th><th>Percentage of contribution</th></tr><tr><td>Participation</td><td>20%</td></tr><tr><td>Assignment</td><td>30%</td></tr><tr><td>Mid-semester test</td><td>20%</td></tr><tr><td>Final semester test</td><td>30%</td></tr></table>
Learning Methods :	Student-centered approach, lecture and discussion, and presentations (structured activities)
Form of Media:	*Power Point* slides, e-book file, and multimedia.
Literature (primary references):	1. Nowikow, I. and Heimbecker, B. 2001. Physics: concepts and connections: Book 1. Toronto, Canada: Irwin Publ., pp.1-720. 2. Heimbecker, B., Nowikow, I., Howes, C. T., Mantha, J., Smith, B. P., van Bemmel, H. M. 2002. Physics: concepts and connections: Book 2. Toronto, Canada: Irwin Publ., pp.1-816. 3. Serway, R. A. 2005. College Physics. Belmont, US: Thomson-Learning Publ., pp.1-1058. 4. Abdullah, M. 2017. Fisika Dasar II. E-book. Tidak dipublikasikan. pp. 1-917. 5. Some power point files and/or course materials relevant to Basic Physics 2 from the internet.
Notes:	*1 sks in learning process = three periods consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.
	**1 sks = 1,59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/Un38/Hk/Ak/2019