



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: <http://s1-fisika.fmipa.unesa.ac.id/>, email: s1-fisika@unesa.ac.id

Undergraduate Programme In Physics

Module Handbook

Module Name :	<i>Ilmu Bahan</i> Material Science
Module level :	Bachelor degree/Undergraduate Programme
Course Code :	4520104086
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	3/Second Year
Module coordinator(s)	Dr. Z.A. Imam Supardi, M.Si
Lecturer(s):	Diah Hari Kusumawati, M.Si Nugrahani Primary Putri, M.Si
Language:	<i>Bahasa Indonesia</i> (Indonesian Language)
Classification within the curriculum:	Compulsory/ Elective
Teaching format/class hours per week during the semester:	3 contact hours of lectures (sks or credit unit*)
Workload :	Lecture: 3 x 50 minutes lectures, 3 x 60 minutes structured activity, 3 x 60 minutes individual activity, 14 weeks per semester. 119 total hours per semester ~ 4.77 ECTS **
Credit Point:	3 sks (4.77 ECTS)
Requirements:	
Learning goals/competencies:	1. Students able to demonstrate and master knowledge related to material physics and their application 2. Students are able to improve their knowledge in the field of material physics as a provision to continue their study in a higher level 3. Students are able to use critical thinking processes in analyzing data and information on research results in the field of material physics
Content	This course is a basic course to understand material science and engineering, material classification, modern materials needed, atomic structure and bonds between atoms, solid crystal structure and metal mechanical properties, as well as understanding their application in life.
Attribute Soft skill:	Scientific report, public speaking, and teamwork



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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 border="1" data-bbox="592 548 1398 757"> <thead> <tr> <th>Assessment Components</th><th>Percentage of contribution</th></tr> </thead> <tbody> <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> </tbody> </table>	Assessment Components	Percentage of contribution	Participation	20%	Assignment	30%	Mid-semester test	20%	Final semester test	30%
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Learning Methods :	Student-centered approach, lecture and discussion, and presentations (structured activities)										
Form of Media:	<i>Power Point</i> slides, e-book files, and multimedia.										
Literature (primary references):	1. Calister, Jr.W.D., 2007, Materials Science and Engineering: An Introduction, Seven Edition, John Wiley & Sons, Inc. 2. Brian S. Mitchell, 2004, An Introduction to Material Science and Engineering, John Wiley & Sons, Inc. 3. National and international journal articles on materials physics topics.										
Notes:	*1 <i>sks</i> 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 <i>sks</i> = 1,59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/Un38/Hk/Ak/2019										