



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>Metode Karakterisasi Bahan</i> Material Characterization Method
Module level :	Bachelor degree/Undergraduate Programme
Course Code :	4520103137
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	3/Second Year
Module coordinator(s)	Diah Hari Kusumawati, M.Si.
Lecturer(s):	Diah Hari Kusumawati, M.Si. Lydia Rohmawati, M.Si.
Language:	<i>Bahasa Indonesia</i> (Indonesian Language)
Classification within the curriculum:	Compulsory / Elective
Teaching format/class hours per week during the semester:	2 contact hours of lectures (sks or credit unit*)
Workload :	Lecture: 2 x 50 minutes lectures, 2 x 60 minutes structured activity, 2 x 60 minutes individual activity, 14 weeks per semester. 79.33 total hours per semester ~ 3.18 ECTS **
Credit Point:	2 sks (3.18 ECTS)
Requirements:	
Learning goals/competencies:	1. Mastering the theoretical concepts of material characterization methods, namely based on qualitative and quantitative mechanical, thermal, electrical, magnetic and optical properties as well as natural phenomena 2. Knowledge of the material characterization process, the working principle of the tool, sample preparation, data collection and analysis 3. Have the ability to communicate ideas or thoughts from the search results of scientific articles related to the characterization of materials both individually and in groups as outlined in the form of writing (narrative review/poster) and presentation
Content	This course examines the mechanical, thermal, electrical, magnetic and optical properties of both metallic and non-metallic materials and their applications. Assessment of learning outcomes is carried out through presentation materials



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

	in PPT (performance structure, ideas for each presentation, creativity, IT applications), presentation skills (delivery techniques, ability to defend ideas, and response to other people's opinions), cohesiveness) and posters										
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 border="1"> <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%
Assessment Components	Percentage of contribution										
Participation	20%										
Assignment	30%										
Mid-semester test	20%										
Final semester test	30%										
Learning Methods :	Student-centered approach, lecture and discussion, and presentations (structured activities)										
Form of Media:	<i>Power Point</i> slides, e-book file, and multimedia.										
Literature (primary references):	- Callister, William D., 2007, Materials Science and Engineering: An Introduction, 7ed, New York: John Wiley & Sons. - Journal articles on material characterization that are relevant and up to date										
Notes:	*1 credit unit or <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 credit unit or <i>sks</i> = 1.59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2019										