

MODULE HANDBOOK

Course:	Introduction to Material Physics
Module Level:	Undergraduate
Code:	FIM201
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	4 th / Second Year
Module Coordinator:	Drs.Siswanto, M.Si.
Lecturer(s):	Drs.Siswanto, M.Si. and Drs.Djony Izak Rudyardjo,M.Si.
Language:	Bahasa Indonesia
Classification within the Curriculum:	Compulsory Course / Elective Course
Teaching format / class hours per week during semester:	3 hours of lectures (50 min / hour)
Workload:	3 hours of lectures, 3 hours of individual activities, and 3 hours of structured tasks, 13 weeks per semester, and total of 117 hours per semester ~ 3.9 ECTS*
Credit Points:	3
Requirements:	(FID201) Modern Physics
Learning Goals/Competencies:	<p>General Competence (Knowledge) : After following this course, students are able to describe physical properties of some materials in the application of technology.</p> <p>Specific Competence:</p> <ol style="list-style-type: none"> 1. Student are able to understand internal structure of Materials such as metals, ceramic, polymer and composite. 2. Student are able to understand analysis methods used for 3. identify internal structure of metals, ceramic, polymer and composite materials 4. Student are able to understand the relationship between 5. properties and internal structure of metals, ceramic, polymer and composite material 6. Student are able to understand measurement of physics, mechanical, thermal and optical properties.
Contents:	A review of the electronic structure of atoms, chemical bonds, molecules, and other types of materials, such as metals, polymers, ceramics, and composite. Overview of the crystal structure, disorder in solids ,diffusion, and phase balance. Defect structure: Phase impurities, crystal defects. Physical properties of materials in the application of technology: thermal, mechanical, electrical, optical and chemical properties. These materials are metals, ceramic, polymers and composite. Measurement of physics, mechanical, thermal and optical properties of materials.
Soft Skill Attribute:	Effort and ethic

Study/Exam Achievements:	<p>Students are considered competent and eligible to pass the course upon obtaining at least 55% of maximum score for exams, homework, quizzes</p> <p>Final score is calculated as follow: 15% homework +15% quiz+ 10% soft skill + 30 % midterm test + 30% final exam.</p> <p>Final grade is defined as follow :</p> <p>A : 75 – 100</p> <p>AB : 70 - 74.99</p> <p>B : 65 - 69.99</p> <p>BC : 60 - 64.99</p> <p>C : 55 - 59.99</p> <p>D : 40 - 54.99</p> <p>E : 0 - 39.99</p>
Learning Methods:	Lectures & discussion
Form of Media:	Powerpoint slides, LCD projectors and whiteboards
Literature(s):	<ol style="list-style-type: none"> 1. Van Vlack, .H., 1991, <i>Elements of Material Science</i>, second ed. New York. 2. Callister, W.D. Jr., 1984, <i>Introduction to Material Science and Engineering</i>, John Wiley & Sons, Inc. New York.
Notes:	<p>*Total ECTS = {(total hours workload × 50 min) / 25 hours</p> <p>Each ECTS is equals with 25 hours.</p>