

Module Handbook

Course:	Experimental Physics II
ModuleLevel:	Undergraduate
Code:	FII202
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	5 th /ThirdYear
ModuleCoordinator:	Jan Adi,S.Si. M.Si.
Lecturer(s):	Jan Adi, S.Si. M.Si.;Supadi, S.Si., M.Si.;NurilUkhrowiyah, S.Si., M.Si. and Drs. TrianggonoPrijo
Language:	Bahasa Indonesia
Classification within the Curriculum:	CompulsoryCourse/ ElectiveCourse
Teachingformat/class hours perweekduring semester:	4hoursof lectures(50min/ hour)
Workload:	4 hours of doing worksheet and pretest preparation, 4 hours of laboratory work, 4 hours of group discussion, searching literature and writing , 13 weeks per semester, and total of 156 hours per semester ~ 5,2 ECTS*
CreditPoints:	2
Requirement(s):	(FID201) Modern Physicsand(FIT206) The Physics of Wave
Learning Goals/Competences:	<p>General Competence(Skill):</p> <ol style="list-style-type: none"> 1. Able to measure the magnitudes of physical through the process of acquisition, processing, and data analysis 2. Able to report the results of measurement or experiment in accordance with the rules and regulations 3. Able to explain the results of measurements based on the theory of optical physics, atomic and nuclear physics, material physics and biophysics which is used as a basic measurement or experiment. <p>SpecificCompetence:</p> <ol style="list-style-type: none"> 1. Able to dependently measure, report and explain the results of measurements of optics experiment 2. Able to dependently measure, report and explain the results of measurements of material experiment 3. Able to dependently measure, report and explain the results of measurements of moder physics experiment 4. Able to dependently measure, report and explain the results of measurements of biophysics experiment 5. Able to report the result in the form of both paper and oral presentation

Contents:	<p>Optics experiment: Interferometer Michelson, Signal transmission by optical fiber, utility of optical fiber as displacement sensor;</p> <p>Material experiment: Determination of Molecular Weight (Mn) Polymer by method of viscosity, Effect Hall, Hardness test material by Rockwell method;</p> <p>Modern physics experiment: Rutherford Scattering, Spectroscopy of β and γ Radiation Energy, Measurement of spectrum differential by SCA; Biophysics experiment: Measurement of concentration solution by Sensor parallel chip capacitors sensor, hearing threshold intensity of human and illumination light waves.</p>
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</p> <p>Pretest 10% + activity daily practical 15% + Presentation 15% + Final Exam 30% + report 30%</p> <p>The form of final exam are easy and practical test</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>
Form of Media:	Laboratory equipments
Learning Methods:	Practical in laboratory, discussion and demonstration of the model structure
Literature(s):	<ol style="list-style-type: none"> 1. Module of experimental Physics II, Physics Department, Universitas Airlangga 2. Leybold, 1998. <i>General Catalogue of Physics Experiments</i>. 3. Phywe, University Laboratory Experiments Physics, 1990. 4. Krane, Kenneth, Modern Physics, John Wiley & Sons, Inc., 1992. 5. N. Tsoulfanidis, Measurement and Detection of Radiation, Hemisphere Publishing corporation, 1983 6. J. Brandrup and E.H. Immergut, Polymer Handbook, John Wiley & Sons, Inc., New York, 1989
Notes:	<p>*Total ECTS = {(total hours workload \times 50 min) / 25 hours</p> <p>Each ECTS is equal with 25 hours.</p>