

## MODULE HANDBOOK

Course:	<b>Experimental Physics II</b>
Module Level:	Undergraduate
Code:	FII301
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	5 <sup>th</sup> / Third Year
Module Coordinator:	Jan Adi, S.Si. M.Si.
Lecturer(s):	Lecturer team
Languange:	Bahasa Indonesia
Classification within the Curriculum:	Compulsory Course / <del>Elective Studies</del>
Teaching format/ class hours per week during semester:	4 hours of lectures (50 min / 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*
Credit Points:	2
Requirement(s):	(FID201) Modern Physics
Learning Goals/Competencies:	<p><b>General Competence (Skill):</b></p> <ol style="list-style-type: none"> <li>1. Able to measure the magnitudes of physical through the process of acquisition, processing, and data analysis</li> <li>2. Able to report the results of measurement or experiment in accordance with the rules and regulations</li> <li>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.</li> </ol> <p><b>Specific Competence:</b></p> <ol style="list-style-type: none"> <li>1. Able to dependently measure, report and explain the results of measurements of optics experiment</li> <li>2. Able to dependently measure, report and explain the results of measurements of material experiment</li> <li>3. Able to dependently measure, report and explain the results of measurements of moder physics experiment</li> <li>4. Able to dependently measure, report and explain the results of measurements of biophysics experiment</li> <li>5. Able to report the result in the form of both paper and oral presentation</li> </ol>
Contents:	<p><b>Optics experiment:</b> Interferometer Michelson, Signal transmtion by optical fiber, utilty of optical fiber as displacement sensor;</p> <p><b>Material experiment:</b> Determination of Molecular Weight (Mn) Polymer by method of viscosity, EffectHall, Hardness test material by Rockwell method;</p> <p><b>Modern physics experiment:</b> Rutherford Scattering, Spectroscopi of <math>\beta</math> and <math>\gamma</math> Radiatio Energy,</p>

	Measurement of specturum diferensial by SCA; <b>Biophysics experiment:</b> Measurement of concentration solution by Sensor parallel chip capacitors sensor, hearing threshold intensity of human and Illumination light waves.
Soft Skill Attribute:	Effort and ethic
Study/Exam Achievements:	Students are considered competent and eligible to pass the course upon obtaining at least 55 Pretest 10% + activity daily practical 15 % + Precentation 15% + Final Exam 30% + report 30%  The form of final exam are eassy and practical test Final grade is defined as follow A : 75 - 100 AB : 70 - 74.99 B : 65 - 69.99 BC : 60 - 64.99 C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99
Forms of Media:	Laboratory equipments
Learning Methods:	Practical in laboratory, discussion and demonstration of the model structure
Literature(s):	<ol style="list-style-type: none"> <li>1. Module of experimental Physics II, Physics Departement, Universitas Airlangga</li> <li>2. Leybold, 1998. <i>General Cataloque of Physics Experiments.</i></li> <li>3. Phywe, University Laboratory Experiments Physics, 1990.</li> <li>4. Krane, Keneth, Modern Physics, John Wiley &amp; Sons, Inc., 1992.</li> <li>5. N. Tsoulfanidis, Measurement and Detection of Radiation, hemisphere Publishing corporation, 1983</li> <li>6. J. Brandrup and E.H. Immerqut, , Polymer Handbook, John Wiley &amp; Sons, Inc., Nw York, 1989</li> </ol>
Notes:	*Total ECTS = {(total hours workload × 50 min) / 25 hours Each ECTS is equals with 25 hours.