Modern Physics Practicum

Module Name :	Modern Physics Practicum
Module Level :	Undergraduate
Code :	32251021
Sub-heading, if applicable :	
Classes, if applicable :	
Semester :	3rd
Module coordinator :	Fauzi Bakri, M.Si
Lecturer(s) :	Fauzi Bakri, M.Si Dr. Hadi Nasbey, S.Pd., M.Si Dwi Susanti, M.Pd Upik Rahma Fitri, M.Pd.
Language :	Indonesian
Classification within the curriculum :	Compulsory course
Type of Teaching	Contact hours per week during the semester	Class Size
Lecture (Expository, discussion, exercise)	50 minutes	40
Workload	Total workload of this course 45,3 hours (1,5 ECTS) per semester which consist of 13,34 hours (0,44 ECTS) classroom activity, 16 hours (0,53 ECTS) structured task, and 16 hours (0,53 ECTS) per semester.	
Credit points :	1,5 ECTS	
Prerequisite course(s) :	-	
Course Outcomes :	After taking this course the student have ability to : CLO102. Able to plan advanced physics experiments. CLO103. Able to produce experimental designs of advanced physics phenomena.Understand the basic concepts of transistors and analyze transistor circuits transistors.	

Content :	1. Planck's constant measurement
	   • Concept of photoelectric effect
	   • Planck's constant measurement experiment planck constant
	   • Data processing and calculation using the least-square method
	2. Hall Effect Experiment
	   • Hall Effect Concept
	   • Hall effect measurement experiment
	   • Data processing and calculation using the least-square method
	3. Balmer series experiment
	   • Balmer series concept
	   • Balmer series measurement experiment	

	• Data processing and calculation using the theory of perversion
	4. Thomson experiment
	    • Thomson experiment concept
	    • Thomson experiment experiment
	    • Data processing and calculation using the least-square method
	5. Milikan drops experiment
	    • Concept of milikan drops
	    • Millipede drip experiment
	    • Data processing and calculation using the theory of perversion
	6. Interferometer experiment
	    • Interferometer concept
	    • Interferometer experiment
	    • Data processing and calculation using the theory of misdirection

Study/exam achievements:	Examination are conducted as unit test, as following | No	Assesment Object	Assesment Technique	Weight
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1	Initial Report	Written test	35%
2	Final Report	Written test	35%
3	Attitude	Discussion	10%
4	Presentation skills	Argumentation	15%
5	Final Practicum Exam	Practicum	15%	
Media :	Laptop/Computer, University LMS, Projector, Video Conference Software: Zoom Meeting, Tools and Materials Laboratory, Software according to laboratory equipment
Literatures :	1. Tim Dosen Fisika Modern Jurusan Fisika FMIPA UNJ, "Panduan Praktikum Fisika Modern", Laboratorium Fisika Modern, Jurusan Fisika FMIPA, UNJ, 2018. 2. Thomton, S. T. and Rex, A. Modern Physics for Scientists and Engineers 3rd Edition. Singapore: Thomson, 2006. (Thomton and Rex) 3. Halliday, Resnick, Jearl Walker, "Principles of Physics 9th", John Wiley, 2011 . 4. da Silva, G. D. S. F., & Villani, A. (2021). The Physics Teaching Practice course and the student-teachers' activity in the beginning of the supervised practicum at schools+. Caderno Brasileiro de Ensino de Física, 38(3), 1561-158