



UNIVERSITY OF LAMPUNG

FACULTY OF TEACHER TRAINING AND EDUCATION

Department of Physics Education

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MODULE HANDBOOK

Bachelor in Physics education

Module name	Science Laboratory Management
Module level	Undergraduate
Code	KFI620105
Courses	Science Laboratory Management
Description	This course is a compulsory course and is the basis for pedagogical understanding of physics teaching materials in schools, which equips students with physics learning based on school laboratories and the environment. After attending this lecture, students are expected to have the ability to formulate physics concepts, principles/laws and procedures based on data analysis in accordance with the scientific approach/scientific procedures, design and manage school physics laboratories. In this lecture, it is discussed how to design school laboratories both using standard laboratory equipment and by utilising tools and materials in the surrounding natural environment. Making practicum guides and / or LKPD (student worksheets), especially those based on approaches: thematic, integrated thematic, problem solving, discovery and inquiry (free discovery) and projects. Laboratory management includes: laboratory administration; storage, circulation, maintenance, and repair of laboratory equipment, health and safety in the laboratory, maintenance and maintenance of equipment. The lecture also discusses the current condition of laboratories in schools, along with development alternatives.
Semester	Odd
Lecturer	Dr. Chandra Ertikanto, M.Pd. Ismu Wahyudi, S.Pd., M.PFis.
Contact Person	+62 813-8740-8646
Language	Indonesian
Relation to curriculum	Undergraduate degree program, Mandatory, 2nd semester

Type of teaching, contact hours	conceptual and contextual with demonstration, discussion (problem solving), question and answer, and lecture methods.
Workload	Contact hours: 14 weeks x 150 minutes Structured learning: 14 weeks x 180 minutes Independent study: 14 weeks x 180 minutes
Credit points	3 (3-0) CP or 4.8 (ECTS) ((14 weeks x 150 minutes) + (14 weeks x 180 minutes) + (14 weeks x 180 minutes) : 60 minutes/hour = 119 hours : 25 hours of study/ ECTS = 4.8 (ECTS)
Requirements according to the Examination regulations	A student must have attended at least 80% of the lectures to sit in the exams.
Learning outcomes (course outcomes) and their corresponding PLOs	After completing this module, a student is expected to: 1. SKI-4 Able to manage, use, and develop physics learning laboratory tools.
Competencies/ Course Learning Outcomes	1. Have knowledge in planning and managing resources in the organisation of classrooms, laboratories and schools under their responsibility. 2. Able to develop the concept of designing and managing school physics laboratories from the aspect of pedagogical understanding of physics teaching materials in schools that are verification, discovery, analysis or synthesis conventionally or instrumentally by equipping students with the development of physics laboratories in schools.
Contents	1. Basic Measurement Science (significant figures, measurement uncertainty, single measurement, repeated measurement) 2. Development of LKPD 3. Laboratory Facilities 4. Laboratory Tools and Materials 5. Laboratory Management (Laboratory Organisation, Inventory of laboratory equipment and facilities, Laboratory administration, Work safety) 6. Laboratory Organisation 7. Laboratory Planning (Preparation of laboratory equipment, making simple physics tools, practicum and demonstration.

Study and examination requirements and forms of examination	1. Attendance = 20% 2. UTS = 25% 3. UAS = 25% 4. Assignment = 10% 5. Participation = 20%
Media employed	LCD, whiteboard, physics teaching aid and online resources
Assessments and Evaluation	Learner Worksheet, paper, written test
Reading list	1. Fred Grover and Peter Wallace (1979). Laboratory Organization and Management. London: Butterworth & Co (Publisher) Ltd. 2. G.L. Squires (1986). Practical physics. Bristol: J.W. Arrowsmith Ltd. 3. Wahyudi, Ismu dan Wicaksono, B. A. 2018. Pengelolaan Laboratorium IPA Berpedoman pada Permendiknas. Yogyakarta. Graha Ilmu. 132 hal. 4. I Dewa Putu Nyeneng (2011). Pengelolaan Laboratorium IPA. Lampung: Universitas Lampung.