KEMENTERIAN PENDIDIKAN TINGGI,
SAINS, DAN TEKNOLOGI
UNIVERSITAS LAMPUNG
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN
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Bachelor of Education in Physics **MODULE HANDBOOK**

Module Name	School Physics
Module Level, if Applicable	Bachelor
Code	KFI620211
Sub-Heading, (*if Applicable)	-
Classes, (*if Applicable)	-
Description	The School Physics course aims to provide an in-depth understanding of the principles of School Physics, as well as their linkages to Social Science Issues (SSI), Technological Pedagogical Content Knowledge (TPACK), and Nature of Science (NOS). This course is one of the Compulsory Study Program Skills Subjects which is oriented towards mastering difficult physics concepts at the level Senior High School. After attending this lecture, students are expected to be able to study the characteristics of high school physics material self-evaluation to diagnose and correct conceptual errors, designing physics learning materials at school in accordance with curriculum demands high school physics/equivalent, designing and carrying out school physics experiments, and creating learning plans and modeling his learning. School physics material discussed in this lecture includes: rectilinear motion, parabolic motion, work and energy, momentum and impulses, fluids, heat temperature and heat transfer, vibrations and waves, optical instruments, static electricity (electrostatics), direct current circuits, induction electromagnetics, alternating current circuits, and renewable energy. The problem in the real world today is that there are still many teachers who have not been able to design learning in a more structured and good administrative way. In addition, students will be taught to integrate technology into learning, using digital tools and online resources to enhance student understanding. Through an understanding of NOS, students will realise that the characteristics of

	science, including how scientific knowledge develops through observation, experimentation and validation, and the role of social and cultural context in shaping physics knowledge.
Semester	5th
Module Coordinator	Dr. Kartini Herlina, M.Si.
Lecturers	Team Teaching of School Physics
Language	Indonesian/English
Classification With in the Curriculum	Study Program Compulsory Course
Teaching Format/Class Hours Per Week During the Semester	Learning activity can be carried out in the form of lecture or students' response: a. Face to face: 50 minutes/SKS b. Structured activity: 60 minutes/SKS c. Independent activity: 60 minutes/SKS
Teaching methods	In class activity : Team Based Project Structured activity : Group Discussion Independent activity : Individual Learning
Workload	1 CU (SKS) for bachelor degree equal to 3 work hours per week or 170 minutes. 3x50 minutes face to face, 3x60 minutes structured tasks, 3x60 minutes independent learning. for 16 weeks (including midterm and final exam), a total of 136 hours/semester. One CU equals to 1.51 ECTS
Credit Points	3 CU (SKS) = 3 x 1.51 = 4.53 ECTS
Prerequisites Courses	-
Course Outcomes (CO)	1. PLO3: Applying Technology, Pedagogy, and Content Knowledge (TPACK) in planning, teaching, and evaluating physics learning. 2. PLO5: Able to plan, implement, and evaluate physics learning based on learning activities to develop critical thinking, creativity, and problem solving skills.

	3. PLO6: Able to develop physics learning resources according to the needs and development of science and technology. 4. PLO7: Able to manage, use, and develop physics learning laboratory tools. 5. CO-1 : Students are able to analyze Core Competencies (KI) and Basic Competencies (KD) for senior high school grades X, XI, and XII. 6. CO-2 : Students are able to design school physics lessons on straight motion and parabolic motion material. 7. CO-3 : Students are able to design school physics lessons on work and energy materials. 8. CO-4 : Students are able to design school physics learning on impulse and momentum material. 9. Students are able to design school physics learning on static and dynamic fluid material. 10. CO-5 : Students are able to design school physics learning on temperature and heat material. 11. CO-6 : Students are able to design school physics learning on vibration and wave material. 12. CO-7 : Students are able to design school physics lessons on optical devices. 13. CO-8 : Students are able to design school physics learning on static electricity material. 14. CO-9 : Students are able to design school physics lessons on direct current circuit material. 15. CO-10 : Students are able to design school physics lessons on electromagnetic induction material. 16. CO-11 : Students are able to design school physics lessons on alternating current circuit material.

	17. CO-12 : Students are able to design school physics lessons on renewable energy materials.
Content	This course is one of the Compulsory Study Program Skills Subjects which is oriented towards mastering difficult physics concepts at the level Senior High School. After attending this lecture, students are expected to be able to study the characteristics of high school physics material self-evaluation to diagnose and correct conceptual errors, designing physics learning materials at school in accordance with curriculum demands high school physics/equivalent, designing and carrying out school physics experiments, and creating learning plans and modeling his learning. School physics material discussed in this lecture includes: rectilinear motion, parabolic motion, work and energy, momentum and impulses, fluids, heat temperature and heat transfer, vibrations and waves, optical instruments, static electricity (electrostatics), direct current circuits, induction electromagnetics, alternating current circuits, and **renewable energy.**
Study/Exam Achievements	Midterm Exam 20% Final Exam (Oral Exam) 20% Assignment 10% Project Assignment 50 % The initial cut - off points for grades A, B+, B, C+, C, and D should not be less than 85%, 80%, 75%, 70%, 65%, 60%, 55%, 50%, and 40%, respectively.
Examination Methods	**1. Midterm Exam (UTS)** ✓ UTS is held at the 8th meeting ✓ UTS is a written test in the form of objective and essay, and carried out in the classroom with an implementation time of 120 minutes according to the module schedule

	✓ UTS is carried out to see the achievements of the PLO and CO which are in accordance with the characteristics of the School Physics module **2. Final Exam (UAS)** ✓ UAS is held at the 16th meeting ✓ UAS is a oral exam with an implementation time of 120 minutes which follows the UAS implementation schedule of the department ✓ UAS is carried out to see the achievements of the PLO and CO which are in accordance with the characteristics of the School Physics module. **3. Project Assignment** ✓ Project assignment is given as group task ✓ Project assignment is carried out for one semester and presented at the end of semester ✓ Project assignment is carried out to see the achievements of the PLO and CO which are in accordance with the characteristics of the School Physics module. **4. Assignments** ✓ Assignments are given as exercise in each meeting in the form of worksheet and independent task ✓ Assignments are about analyzing simple problems in physics and solving them with the concept of School Physics ✓ Assignments are given as individual tasks or group tasks and submitted in a limited time.

	✓ The assignments are carried out to see the achievements of the PLO and CO which are in accordance with the characteristics of the School Physics module
Forms of Media	E-learning, e-book, video
Literature	1. Mansfield, M. M., & O'sullivan, C. (2020). Understanding physics. John Wiley & Sons. 2. PhysPort. (2024). Supporting physics teaching with research-based resources. PhysPort.org 3. Society of Physics Professors. (2024). Integrating digital technologies into inquiry-based physics lessons. SPP Workshop Series 4. Smith, James D., and Robert A. Johnson. 2024. "Physics Education for Students: An Interdisciplinary Approach." Cambridge: Cambridge University Press. 5. Resnick, R., Walker, J., & Halliday, D. (1988). Fundamentals of physics (Vol. 1). Hoboken: John Wiley

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PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
CO 1			√		√	√	√				
CO 2			√		√	√	√				
CO 3			√		√	√	√				
CO 4			√		√	√	√				
CO 5			√		√	√	√				
CO 6			√		√	√	√				
CO 7			√		√	√	√				
CO 8			√		√	√	√				
CO 9			√		√	√	√				
CO 10			√		√	√	√				
CO 11			√		√	√	√				
CO 12			√		√	√	√				