



KEMENTERIAN PENDIDIKAN TINGGI,
SAINS, DAN TEKNOLOGI
UNIVERSITAS LAMPUNG

FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN

Jalan Prof. Dr. Sumantri Brojonegoro No.1 Gedong Meneng - Bandar Lampung 35145

Telp./Fax: (0721) 704624 e-mail: fkip@unila.ac.id,

laman: <http://fkip.unila.ac.id>

Bachelor of Education in Physics

MODULE HANDBOOK

Module Name	History of Physics Development
Module Level, if Applicable	Bachelor
Code	KFI620106
Sub-Heading, (*if Applicable)	
Classes, (*if Applicable)	
Semester	2nd
Description	This course provides knowledge and insight into the development of physics as a discipline. After completing this lecture, students are expected to be able to understand the development of physics as a discipline and the problems and thoughts behind it. The scope of the lecture includes: Physics in Ancient Babylon and Egypt, Ancient Greek Physics, the Islamic Period, and the development of Classical Physics and Modern Physics. Development of Classical Physics and Modern Physics. This course also reviews literature on topics concerning an aspect of physics or the contribution of a nation to the development of physics. Physics or the contribution of a nation to the development of physics, which includes the contribution of China, India, Japan, and Indonesia. Development of Mechanics in Each Period, Development of Heat Science in Each Period, in this lecture also discussed development of branches of physics in various periods. SSI: Examine the influence of technological advances, scientific ethics and cultural aspects on the development of physics and explain how social issues, such as climate change and sustainability, are related to physics discoveries and their applications in society.



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	TPACK: Integrate the use of technology in teaching the history of physics, including the utilization of digital resources, simulations, and visual aids and encourage students to design effective teaching strategies, which combine physics content with technology and pedagogy. NOS: Studies how physics knowledge develops through the scientific process, including observation, experimentation and collaboration. Emphasizes the importance of understanding the NOS to appreciate scientific thinking and criticize scientific claims.
Module Coordinator	Dr. Chandra Ertikanto, M.Pd.
Lecturers	Team Teaching of History of Physics Development
Language	Indonesian/English
Classification With in the Curriculum	Study Program Compulsory Courses in the first year Bachelor Degree
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: Inquiry based Learning Structured activity: Group Discussion Independent activity: Individual task
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,



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	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)	After completing this module, a student is expected to: 1. PLO 1: Demonstrate knowledge of classical physics (mechanics, electrodynamics, thermodynamics, oscillations, waves and optics) and are familiar with the fundamentals of quantum, atomic and molecular, nuclear, elementary particle and solidstate physics. 2. CO-1: Students are able to analyze the relationship between force and vibration in everyday life. 3. CO-2 : Students are able to understand the concepts of physics during the Babylonian period. 4. CO-3 : Students are able to understand the concepts of physics in ancient Egypt. 5. CO-4 : Students are able to understand the concept of physics in ancient Greece. 6. CO-5 : Students are able to understand the concept of physics during the Islamic period. 7. CO-6 : Students are able to understand the development of classical physics. 8. CO-7 : Students are able to understand the development of modern physics. 9. CO-8 : Students are able to understand China's contribution to the development of physics. 10. CO-9 : Students are able to understand India's contribution to the development of physics.



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	11. CO-10 : Students are able to understand Japan's contribution to the development of physics. 12. CO-11 : Students are able to understand Indonesia's contribution to the development of physics. 13. CO-12 : Students are able to understand the development of mechanics in each period. 14. CO-13 : Students are able to understand the development of heat science in each period.
Content	1. The concept of physics in the babylonian period. 2. Introduction to the concept of physics in ancient Egypt. 3. Ancient Greek physics 4. Physics in Islamic Times 5. The development of classical physics 6. The development of modern physics 7. China's contribution to the development of physics 8. India's contribution to the development of physics 9. Japan's contribution to the development of physics 10. Indonesia's contribution to the development of physics 11. development of mechanics in each period 12. The development of heat science in each period
Study/Exam Achievements	Participants are evaluated based on; 1. Participation Activities (10%) 2. Quizzes (20%) 3. Assignment (30%) 4. Final Semester Exam (20%) 5. Midterm exams (20%)



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	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. Participation Activities The assessment for Participation Activities aims to assess the level of active involvement of students in the learning process. Participation activities include discussions, group work, presentations, and in-class interactions 2. Quizzes ● Quizzes is held at the end of the material ● Quizzes 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 ● Quizzes is carried out to see the achievements of the PLO and CO which are in accordance with the characteristics of the module 3. Assignment ● 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 module. 4. Midterm Exam (UTS) ● UTS is held at the 8th meeting



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	• 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 module 5. Final Exam (UAS) • UAS is held at the 16th meeting • UAS is a written test in the form of objective and essay, and carried out in the classroom 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 Basic Physics module.
Forms of Media	E-learning, e-book, video, LCD, whiteboard, and online resources
Literature	1. Viyanti & Feriyansyah. 2020. Perkembangan Sejarah Fisika dari Masa ke Masa. 2. Viyanti. 2022. Sejarah Perkembangan Fisika Abad ke-19 3. Cajori F. 1968. A History of Physics. New York: Duver Publication Inc. 4. Burch, R. (2012). <i>A History of Physics: From the Ancient Greeks to the Present Day</i>. Cambridge University Press. 5. Hajar, S., Silalahi, M., Wajdi, F., Arif, A., Wahyono, E., & Rahmiyanti, F. (2024). <i>Sejarah Fisika</i>. Eureka Media Aksara.

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