

Module Description

Module name	Course Module
Module level, if applicable	Master of Physics Education
Code, if applicable	32363113
Subtitle, if applicable	-
Course, if applicable	IT and Physics Learning Multimedia Development
Semester(s) in which the module istaught	II (Even Semester)
Person responsiblefor the module	Lecturer of Courses
Lecturer	1. Dr. Bambang Heru Iswanto, M.Si
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is a compulsory course and offered in the 2 st semester.
Type of teaching, contact hours	<p>Teaching methods used in this course are:</p> <ul style="list-style-type: none"> - Lecture (i.e., small group discussions and project-based learning) - Structured assignments (i.e., project development and presentations) <p>The class size for lecture is 20 students. Contact hours for lecture is 40 hours, assignments are 96 hours, and privat study is 96 hours.</p>
Workload	For this course, students required to meet a minimum of 232 hours in one semester, which consist of: 40 hours for lecture, 96 hours for structured assignments, 96 hours for private study,
Credit points	7.8 ECTS
Requirements according to the examination regulations	Students should have attended all lectures and submitted all scheduled individual and group assignments prior to the final examination.

Recommended prerequisites	Students should have attended all lectures and submitted all scheduled individual and group assignments prior to the final examination.
Program learning outcomes	<p>PLO 2 Master advanced knowledge of classical physics and modern physics</p> <p>PLO 3 Able to design innovative physics learning in accordance with the demands of the curriculum by using appropriate evaluation and assessment techniques</p> <p>PLO 5 Able to propose various alternative solutions to the problems of physics education with inter- and multidisciplinary approaches</p> <p>PLO 6 Able to design scientific research to solve physics education problems</p> <p>PLO 8 Able to produce scientific articles that have novelty, and publish them in accredited national scientific journals, proceedings of international seminars, or international journals.</p>

Content	<p>Students will learn about:</p> <p>This course aims to enrich knowledge in the field of Information and Communication Technology (ICT) in education and skills in building physics learning multimedia systems. Topics of discussion include: (1) ICT in education: ICT infrastructure, e-learning systems, ICT-based educational technology; and (2) Development of multimedia learning: multimedia introduction, production of multimedia content, multimedia data representation, storage and retrieval of multimedia data, multimedia networks, and multimedia distribution. Lectures are equipped with practicums to provide students with practical experience on how to design and produce multimedia according to student characteristics. Lectures are carried out with a project-based learning approach. Through this lecture, it is expected that students will be skilled and able to create innovative and tested works through the development of knowledge in the field of Physics education. Lectures will be carried out using the Project Based Learning (PjBL) Learning Model using various media and facilities such as Ispring suite software, etc.</p>
Forms of Assessment	Assessment of the learning process follows the following components: attendance 5%; assignments and presentations 30%; mid-test 30%, and final-test 35%.
Study and examination	<p>Study and examination requirements:</p> <ul style="list-style-type: none"> - Students must attend 15 minutes before the class starts.

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Media employed	Powerpoint slides, simulation videos, learning management system (LMS), ZOOM application, and UNJ e-learning.
Reading list	<ol style="list-style-type: none"> 1. Liping Deng, Will W. K. Ma, Cheuk Wai Rose Fong. (2018). New Media for Educational Change. Springer Singapore. 2. Sharon Smaldino. (2015). Instructional Technology and Media for Learning. Pearson, Year 3. Richard E. Mayer. (2009). Multimedia Learning-Cambridge University Press 4. Tzu-Bin Lin, Victor Chen, Ching Sing Chai. (2015). New Media and Learning in the 21st Century_ A Socio-Cultural Perspective-Springer. 5. Johannes Konert. (2014). Interactive. Multimedia Learning Using Social Media for Peer Education in Single-Player Educational Games. Springer: New York London. 2014 6. Robert Maribe Branch, Hyewon Lee, Sheng Shiang Tseng. (2019). Educational Media and Technology Yearbook: Volume 42. Springer International Publishing