

Module Description

| | |
|--|---|
| Module name | Course Module |
| Module level, if applicable | Master of Physics Education |
| Code, if applicable | 30060016 |
| Subtitle, if applicable | - |
| Course, if applicable | Thesis |
| Semester(s) in which the module is taught | IV (Even Semester) |
| Person responsible for the module | Lecturer of Courses |
| Lecturer | 1. Dr. rer nat. Bambang Heru |
| Language | Indonesian Language [Bahasa Indonesia] |
| Relation to Curriculum | This course is an elective course and is offered in the 3 rd semester. |
| Type of teaching, contact hours | <p>The teaching methods used in this course are:</p> <ul style="list-style-type: none"> - Lectures (i.e., group investigations, small group discussions, case studies, and video-based learning) - Research & writing for assignments (ie, doing research on misconceptions in physics and write scientific papers for publication). <p>The class size for the lecture is 20 students. Contact hours for lecture is 80 hours, assignments are 192 hours, and private study is 192 hours</p> |
| Workload | For this course, students required to meet a minimum of 464 hours in one semester, which consist of: 80 hours for lecture, 192 hours for structured assignments, 192 hours for private study |
| Credit points | 15.6 ECTS |
| Requirements according to the examination regulations | Students should have attended all lectures and submitted all scheduled individual assignments prior to the master's thesis defense. |

| | |
|----------------------------------|--|
| Recommended prerequisites | Students should have attended all lectures and submitted all scheduled individual assignments prior to the master's thesis defense. |
| Program learning outcomes | <p>PLO 1 Able to develop logical, critical, systematic, and creative thinking through scientific research in the field of physics education.</p> <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 4 Able to develop learning aids by utilizing advanced information technology and the student environment</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 7 Able to carry out scientific research in the field of physics education based on scientific methodology, logical, critical, systematic and creative thinking.</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 provide students with independent work experience in carrying out research in the field of physics education under two supervisors. The research results must then be written in research reports in the form of theses and scientific articles for publication. The reference for thesis writing follows the guidebook for thesis writing from the university. The thesis that has been approved by the two supervisors is then submitted to be tested in the thesis examination session. Through this course it is hoped that students will be able to conduct quality research, be recognized nationally and internationally, as well as be of benefit to society and science.</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%. |

| | |
|--|---|
| <p>Study and examination requirements</p> | <p>Study and examination requirements:</p> <ul style="list-style-type: none"> - Students must attend 15 minutes before the class starts. - Students must switch off all electronic devices. - Students must inform the lecturer if they will not attend the class due to sickness, etc. - Students must submit all class assignments before the deadline. - Students must attend the exam to get final grade. <p>Form of examination: Forms of examination: independent research and presentation.</p> |
| <p>Media employed</p> | <p>Powerpoint slides, simulation videos, learning management system (LMS), ZOOM application, and UNJ e-learning.</p> |
| <p>Reading list</p> | <ol style="list-style-type: none"> 1. Buku pedoman akademik (BPA) Program Pasca UNJ Tahun 2018 2. Buku Pedoman Akademik (BPA) FMIPA Tahun 2020 3. Mekanisme penulisan Tesis Program Magister Pendidikan FMIPA, 2017 |