INTERNAL MONITORING AND EVALUATION REPORT MEASUREMENT OF SMT 117 AND 118 GRADUATE LEARNING OUTCOMES

(Evaluation of the Average Value of UTS-UAS Results)

Compiler:

Study Program Quality Assurance Team

PHYSICS EDUCATION STUDY PROGRAM
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
JAKARTA STATE UNIVERSITY

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1. INTRODUCTION

1.1. Background

Learning is one of the key components in higher education and the educational process in general. A good understanding of the learning process can help improve educational effectiveness and the achievement of educational goals.

Lecturers have an important role in providing subject matter, providing guidance, and facilitating the learning process. Meanwhile, students are active in receiving, processing, and applying the knowledge provided. Besides interaction with lecturers, learning resources are also very important in the learning process. This can include textbooks, online materials, scientific journals, and various other types of information sources. Students should be able to utilize these sources to deepen their understanding of a particular subject. The learning environment involves the physical and social context in which learning takes place. This can include classrooms, libraries, laboratories and online platforms. A supportive learning environment can improve student motivation, concentration and learning outcomes.

Guidelines for measuring learning outcomes are tools used to measure the extent to which students have achieved the learning objectives set out in the education curriculum. It is an important component in the education evaluation process, and graduate learning outcomes form the basis of the competency standards that students must achieve. Graduate learning outcomes cover various aspects, including attitudes, knowledge and skills. Measurement guidelines help determine the best way to measure and evaluate student progress in this regard. Measurement guidelines help in determining the extent to which the learning process has been successful in achieving educational objectives. This allows educational institutions to ensure that they are providing quality learning experiences.

Competency standards are the criteria used to assess whether graduates have achieved the expected level of competence. Measurement guidelines assist in assessing whether students have met these standards. The results of the measurement guidelines can be used to make improvements in the learning process. If there are weaknesses in achieving learning outcomes, educational institutions can identify areas for improvement. Learning outcomes measurement guidelines are an integral part of the continuous education cycle. They help educational institutions to continuously improve and refine their education to match the latest developments in the field of study and the demands of society and the world of work.

1.2. Destination

Objectives of Physics Education Study Program FMIPA Universitas Negeri Jakarta

1. Producing Physics Education graduates:
    a. Qualified so as to be able to master, explore and develop science and technology in physics learning
    b. Mastering theoretical and practical concepts in physics and physics education.
    c. Able to work as a professional, qualified, competitive and innovative teacher or educator in the scientific and teaching fields of physics through mastery of theoretical concepts of physics, the ability to analyze, research and apply learning models and technology-based learning tools that suit the needs of physics learning in the classroom and in the laboratory.
    d. Able to continue education to a higher level in order to further develop knowledge in physics education both at home and abroad.
    e. Have scientific insights, skills, entrepreneurship, sportsmanship and honesty values so that they are able to develop themselves in society.

2. Producing quality scientific works from the results of research in the field of Physics Education published in accredited national journals and reputable international journals.
3. Producing community service work that improves the quality of life of the community, especially those related to the field of physics education.
4. Having collaborative activities with domestic and foreign agencies to improve the quality of the output of the Physics Education Study Program FMIPA UNJ in the fields of learning, research and community service.

2. METHODS

2.1. Implementation

Monitoring and evaluation of the achievement of learning graduates of the Physics Education Study Program FMIPA UNJ is carried out at the end of each odd semester (117) and even semester (118). M&E activities are organized by the quality assurance team of study programs, institutions and related units coordinated by the UNJ Internal Quality Assurance System.

2.2. Mechanism

An important step to ensure that the Physics Education Study Program at FMIPA UNJ meets educational quality standards and can measure the achievement of Graduate Learning Outcomes (LLOs) in accordance with the requirements set by SN DIKTI (Indonesian National Higher Education System).

Here are the steps described:

1. Determination of SLOs: The process begins by establishing the Graduate Learning Outcomes (LLOs) that must be achieved by students based on the guidelines and standards imposed by SN DIKTI. These include Attitude, Knowledge, General Skills, and Specific Skills.
2. Development of Performance Indicators: The course lecturer team develops Performance Indicators (PIs) which are a more detailed description of each SLO. These KPIs help in measuring the extent to which students have achieved certain SLOs.
3. Classification and Classification of IK: The developed Performance Indicators are classified based on the corresponding SLOs. This helps in organizing the measurement of graduate learning achievement in accordance with SN DIKTI criteria.
4. Monev (Monitoring and Evaluation): The Quality Assurance Team of the Study Program conducts monitoring and evaluation (monev) using instruments that have been developed. This involves measuring student achievement against the IK that has been set.
5. Analysis and Reporting of M&E Results: The results of the M&E are analyzed to evaluate the extent to which the SLOs have been achieved. These results are then reported to the Coordinator of the Physics Education Study Program and the Quality Assurance Group of FMIPA UNJ.
6. Follow-up Steps: The Study Program Coordinator (Koorprodi) uses the M&E results as a basis for planning management review meetings. This step is a follow-up to address the M&E findings and ensure necessary improvements in the learning process.

These measures create an ongoing cycle to ensure that the study program adheres to educational quality standards and continuously improves the quality of learning and the achievement of graduates in accordance with the set objectives. It also assists in maintaining accountability and continuous improvement in higher education.

2.3. Scope

The learning outcome measurement system reflects a comprehensive approach and is in accordance with the principles of good assessment. The learning outcome measurement system refers to the Jakarta State University Regulation number 2 of 2017 concerning the Education and Learning Process at Jakarta State University. The assessment principles used, namely educative, authentic, objective, accountable, and transparent, help create a good learning environment and provide strong guidelines for student assessment. The following is an explanation of the principles of assessment carried out:

1. Objective: Objective assessment is based on agreed standards, and is free from the subjectivity of the assessor. This creates fairness and consistency in assessment.
2. Accountable: Clear assessment criteria and well-explained procedures are important. Thus, students and lecturers understand exactly how the assessment will be conducted. This also creates fairness in assessment.
3. Transparent: The assessment process and results should be accessible to all stakeholders, including students. This creates clarity and trust in the assessment system.
4. Flexible Measurement: It is important to note that the measurement of learning outcomes can be done through various means, such as written exams, oral exams, presentations, assignments, quizzes, group discussions, projects, and others. This recognizes variations in the nature and characteristics of learning outcomes.

This comprehensive system helps to create a learning environment that supports student development and ensures that assessment properly reflects their achievements in accordance with educational objectives. In addition, the commitment to measuring all courses and the emphasis on the principles of good assessment contribute to improving the quality of education within Universitas Negeri Jakarta.

5. RESULTS AND ANALYSIS

Evaluation of the results of Monev measuring graduate learning outcomes based on course analysis in the Physics Education Study Program is an important step in ensuring that educational programs are in accordance with established goals and standards. The following is an evaluation of the results of M&E of measuring the learning outcomes of Physics Education Study Program graduates:

Learning Outcomes Passed based on a review of the average UTS and UAS Exam Scores
each course of Physics Education Study Program

NO.MK	MK	PLO														
		S1	**S2**	**P1**	**P2**	**P3**	**P4**	**P5**	**KK1**	**KK2**	**KK3**	**KK4**	**KU1**	**KU2**	**KU3**	**KU4**
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Basic Physics 1		90	90	92				87				90			
2	Basic Physics Practicum 1		92	90		90					90		92			
3	Calculus 1		90		89				92				90			
4	General Chemistry		90					89	92				92			
5	Bahasa Indonesia	92						90	92				92			
6	Educational Insights		90				92				92				92	
7	Pancasila	92					90				91		92			
8	Olympism	92						90	92				92			
9	Algorithms and Programming		90		92	92			89				87			
10	Basic Physics 2		90	90	92				92				92			
11	Basic Physics Practicum 2		92	89		90					92		92			
12	Calculus 2		90		89				90				90			
13	General Biology		89					92	90				90			
14	Learner Development		90				89				92				90	
15	Citizenship		90				91				92				92	
16	Religious Education	90					92				92		92			
17	Science Learning Strategies		90				92				89		89			
18	Introduction to Information Technology		89					92	92				89			
19	Physics Math 1		87	90	90				92				89			
20	Electronics		87	89		90					90		89			
21	Electronics Practicum		89	92		92					92		92			
22	Modern Physics		89	89	90				90				90			

23	Modern Physics Practicum		89		87	89			90				90			
24	Learning and Learning Theory		92				92				90		90		92	
25	Big Data and Programming		90		89	89			90				89			
26	Classical Mechanics		87	90	90				89				87			
27	Math Physics 2		87	89	89				90				90			
28	Waves		89	90	89				87				89			
29	Magnetism		87	87	89				89				90			
30	Computational Physics		89		90	90			87				89			
31	Computational Physics Practicum		89		90	90			92				90			
32	Logic and Scientific Reasoning		87				89				89				90	
33	Foundation of Education		90				90				92				92	
34	Thermodynamics		89	87	90				87				89			
35	Quantum Physics		88	89	90				88				90			
36	Introduction to Physics of Solids		87	89	89				90				87			
37	Learning Media Development		92	89			90			90			90			
38	Science Learning Assessment		90	90			92					89	90			
39	Curriculum Analysis		90	92			92			90				90		
40	Educational Research Methodology		92					89	90				90		90	90
41	Science Learning Design		89	90			87			92				92		
42	Teaching Skills		90				90				92				89	
43	English for Teaching		90					88	92					90		
44	Introduction to Nuclear Physics		87	90	90				90				89			
45	Teaching Material Development		90	92			89			92			90			
46	Research Statistics		90		87				89				90			
47	ICT-based Learning		90				90				90		92			
48	Laboratory Management		90				92				92		90			
49	Earth and Space Physics		92				89				90		90			

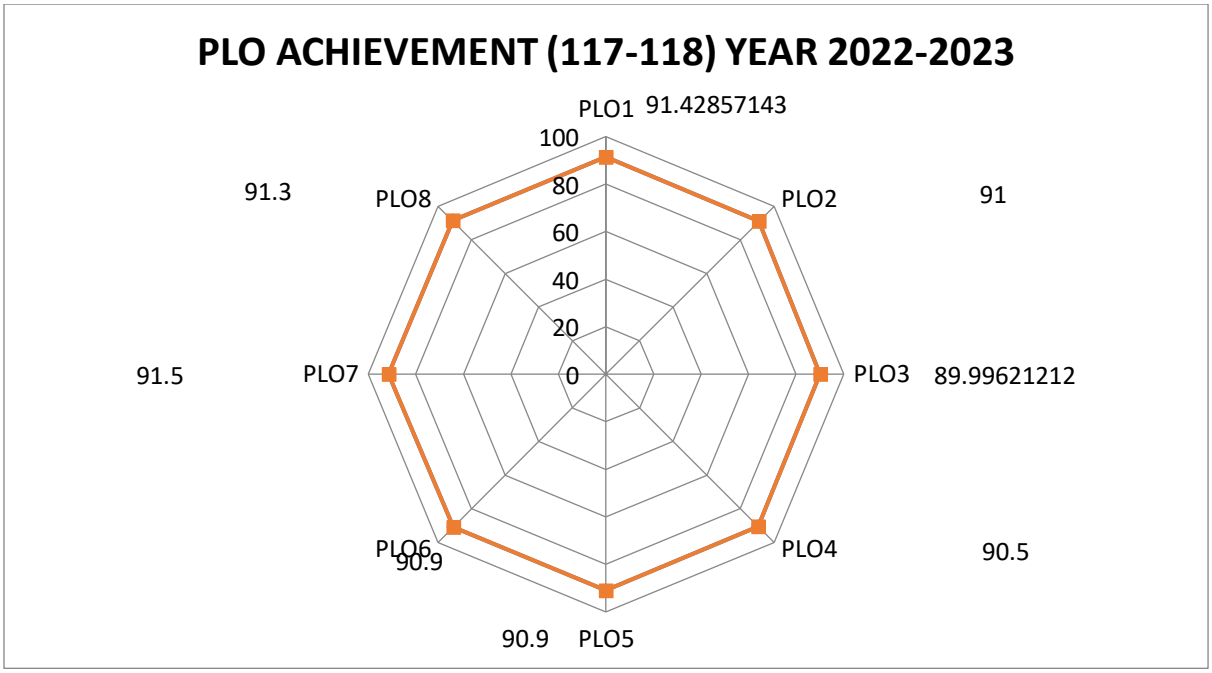
50	Special Topics in School Physics		89				90				90		92			
51	Environmental Physics Education		90				90				90		92			
52	Entrepreneurship		90				90				92		92			
53	implementation of teaching material development in schools		89	90			90					92			92	90
54	implementation of learning media development in schools		89	90			90					92			92	90
55	implementation of learning instrumentation in schools		89	90			90					92			92	90
56	Pre-Thesis Seminar		92					92	90					90		
57	Thesis		92					90	92					90	90	
58	Statistical Physics		85	90			90			90						
59	Physics of Solids		92	89			92			90						
60	Magnetic Field Theory		90	90			90			92						
61	Digital Electronics			89			90	90				89				
62	Digital Electronics Practicum		90	87	87		92				90					
63	Sensor Technology			89			90	90				87				
64	Environmental Studies in Physics Learning		90				90				90		92			

Graduate Learning Outcomes based on average review
each PLO of Physics Education Study Program

NO.MK	**MK**	**PLO1**	**PLO2**	**PLO3**	**PLO4**	**PLO5**	**PLO6**	**PLO7**	**PLO8**
1	Basic Physics 1			91					
2	Basic Physics Practicum 1			90					
3	Calculus 1				92				
4	General Chemistry			90,25					
5	Bahasa Indonesia		92						
6	Educational Insights	92							
7	Pancasila	92							
8	Olympism		92						
9	Algorithms and Programming	94	89	92	89			91	
10	Basic Physics 2			91					
11	Basic Physics Practicum 2			89					
12	Calculus 2				90				
13	General Biology			91,67					
14	Learner Development					90,25			
15	Citizenship	90							
16	Religious Education	90							
17	Science Learning Strategies					90			
18	Introduction to Information Technology				92				
19	Physics Math 1				92				

20	Electronics			91					
21	Electronics Practicum			92					
22	Modern Physics			89,5					
23	Modern Physics Practicum			87					
24	Learning and Learning Theory					91,2			
25	Big Data and Programming				90				
26	Classical Mechanics			90					
27	Physics Math 2				90				
28	Waves			89,5					
29	Magnetism			90					
30	Computational Physics				87				
31	Computational Physics Practicum				92				
32	Logic and Scientific Reasoning		90						
33	Foundation of Education					91			
34	Thermodynamics				90				
35	Quantum Physics				91				
36	Introduction to Physics of Solids				90				
37	Learning Media Development					90			
38	Science Learning Assessment					90,2			
39	Curriculum Analysis					90			
40	Educational Research Methodology						90,2		
41	Science Learning Design					92			
42	Teaching Skills					90,25			
43	English for Teaching	90							
44	Introduction to Nuclear Physics			90					
45	Teaching Material Development					92			
46	Research Statistics						91,6		
47	ICT-based Learning					90,5			
48	Laboratory Management							92	

49	Earth and Space Physics			92					90
50	Special Topics in School Physics					91			92
51	Environmental Physics Education					90			92
52	Entrepreneurship		92						
53	implementation of teaching material development in schools					92			92
54	implementation of learning media development in schools					92			92
55	implementation of learning instrumentation in schools					92			92
56	Pre-Thesis Seminar				90			92	92
57	Thesis				92			91	90
58	Statistical Physics			90					
59	Physics of Solids			89					
60	Magnetic Field Theory			90					
61	Digital Electronics			89					91
62	Digital Electronics Practicum			87					
63	Sensor Technology			89					90
64	Environmental Studies in Physics Learning	92							



In this evaluation, some aspects that can be evaluated include:

1. Consistency of Course Learning Outcomes: Ensure that the learning outcomes of each course are in accordance with the established graduate learning outcomes. This will ensure that students develop knowledge and skills that are appropriate for the profession.
2. Ability to Measure Learning Outcomes: Evaluate the extent to which the courses and assessment instruments used in each course can measure learning outcomes well. A good assessment must be able to accurately reflect students' abilities and understanding.
3. Identification of Trends or Patterns: Evaluation of M&E results can help identify trends or patterns in the achievement of graduate learning outcomes. Are there outcomes that are typically higher or lower? This information can help in decision-making and improvement.
4. Comparison Between Courses: You can compare the achievement of graduate learning outcomes between courses to identify courses that may need improvement or those that have done well.
5. Improvements and Recommendations: The evaluation should make recommendations for improvement. If there are findings that indicate the need for improvement, recommend concrete corrective actions. This could include changes in the curriculum, teaching methods, or assessment instruments.

6. Continuous Monitoring: The M&E evaluation should also include a plan for ongoing monitoring. How will you continue to monitor and evaluate progress in achieving graduate learning outcomes in the future?
7. Impact on the Learning Process: The evaluation should also describe the impact of the M&E results on the learning process. Whether the changes or improvements made after the evaluation have a positive effect on the achievement of learning outcomes.

This kind of evaluation is important to ensure that the study program continues to improve the quality of education and is in line with the set educational objectives. Concrete steps and improvement recommendations resulting from the evaluation will help improve the effectiveness of the education program in achieving the desired educational goals.

6. CLOSING

The approach to view the guidelines for measuring graduate learning outcomes as a document that is open to continuous improvement is a very wise approach. Education is an ever-evolving process, and adaptation to change is key to improving the quality of education.

Being open to continuous improvement creates a dynamic learning culture where educational institutions continuously strive to be better at meeting educational objectives and quality standards. It also enables educational institutions to cope with changes in the demands of society and the world of work.

Thank you to you and everyone who contributed to this process. This spirit of continuous improvement will help maintain the quality of education and ensure that students have a quality educational experience.

7. CONCLUSIONS

The results of measuring graduate learning outcomes (ELOs) in the Physics Education Study Program have met the criteria of very good and good. This shows that the efforts and commitment of lecturers in teaching courses in supporting the achievement of SLOs have been successful. This success reflects the strong quality of education and the efforts of the lecturer team in providing effective learning to students. It can also reflect the quality of the curriculum and teaching methods used in the study program.

8. ADVICE

Suggestions and suggestions for improvement are an important part of the evaluation and continuous improvement process. Involving all stakeholders, including faculty, students, and

administrative staff, in providing feedback and suggestions can help identify areas for improvement and formulate concrete corrective actions.

The approach to developing innovations in the development of sub-course learning outcomes (CPMK) work indicators and improving student centered learning activities is a very positive step in advancing education. Here are some ideas that you can consider in developing innovations:

1. Student Participation: Involve students in the development of the CPMK work indicators. They can provide valuable insights into what they expect from the course and what they consider important for success in that area of study.
2. Using Technology: Utilize technology in the learning process. Online learning platforms, interactive learning tools and online resources can help improve interactivity and access to learning materials.

1. PURPOSE

Measurement of Graduate Learning Outcomes (GLOs) and Their Evaluation

2. SCOPE

This SOP contains Measurement of Graduate Learning Outcomes (ELOs) and their Evaluation

3. DEFINITION

The CP Measurement activity of study program graduates is not only a formulation of learning objectives to be achieved and must be possessed by all graduates, but also provides information to the public about the quality statement of study program graduates in higher education.

4. LEGAL BASIS

4.1. Law of the Republic of Indonesia No. 12/2012 on Higher Education
4.2. Government Regulation of the Republic of Indonesia No. 19 of 2005 on National Education Standards
4.3. PERMENDIKBUD RI No. 50 of 2014 concerning Higher Education Quality Assurance System
4.4. Regulation of the Minister of Education and Culture of the Republic of Indonesia No. 3 of 2020 concerning National Higher Education Standards

5. SERVICE REQUIREMENTS

5.1. Graduate Learning Outcomes (LLOs) are competencies that must be achieved by graduates of a study program based on the elaboration of an independent professional profile that has been agreed upon with the Advisory Board and Stakeholders set by the study program.
5.2. SLO measurement is the process of measuring the competencies achieved by students through contributing CPMK. SLO measurement is carried out through CPMK measurement every semester.
5.3. Course Learning Outcomes (CPMK) are competencies that students are targeted to achieve after completing the course.
5.4. A course portfolio is a collection of all materials used in the course learning process to achieve the CPMK. The contents of the course portfolio include: (1) course outline and content including CPMK, reading materials as references that support learning, meeting schedule, (2) teaching methods, (3) assessment strategies and rubrics, (4) good examples of student work, (5) Teaching Team reflections on CPMK, and (6) recommendations for the progress of students participating in the course and future plans.
5.5. SLO measurement software is software that is used in measuring the achievement of SLOs based on the level of contribution of CPMK and its assessment value, so that by using this software, the SLO achievements of students can be known.

5.6. Semester Learning Plan (RPS) is a learning planning document that is prepared as a guide for students in carrying out lecture activities for one semester to achieve predetermined learning outcomes.
5.7. Assessment tool is a tool/method used by lecturers in measuring CPMK (based on assessment of quizzes, UTS, UAS, paper preparation assignments, case study projects, design assignments) and ELOs (based on CPMK contributions).

6. PROCEDURE

6.1. Develop a Semester Learning Plan that also includes a CPMK/CPL measurement plan in the RPS of the course being developed.
6.2. Implementing CPMK measurement during the learning process
6.3. Working on assessment tools for CPMK measurement
6.4. Entering CPMK measurement results into the software
6.5. Evaluate the achievement of ELOs based on the measurement results of CPMK
6.6. Re-measuring CPMK if the achievement of CPL has not been completed (remidi)
6.7. Carry out remediation of SLOs that have not been completed
6.8. Compile a course portfolio
6.9. Evaluate the achievement of SLOs from each CPMK
6.10. Evaluate the portfolio that has been compiled by the lecturer
6.11. Provide input suggestions for improving the PBM process in the future related to the implementation of OBE
6.12. Make improvements based on PBM evaluation results contained in the portfolio
6.13. Improvement of OBE implementation
6.14. Evaluate the SLOs of students who have graduated
6.15. Putting student SLO results into the Diploma Supplement

7. Equipment/ Supplies

7.1. Computer
7.2. Printer
7.3. Learning Portfolio File
7.4. LCD
7.5. Measurement Software

8. PROCEDURES AND SCHEMATICS

No.	Activities	Executive			Quality Assurance Cluster	Vice Dean Academic	Standar quality			description
		Lecturer	Student	Head of Study Program			Completness	Time	Output	
1	Develop a Semester Learning Plan that also includes a measurement plan Courses learninhg/Courses Learning Outcomes in Semester Learning Plan courses that are compiled.							2 week		
2	Implementing Courses Learning Outcomes measurement during the learning process						Semester Learning Plan	1 semester	Assessment tool	
3	Working on assessment tools for Courses Learning Outcomes measurement						Assessment tool	1 semester	Result of Measurement	
4	Entering Courses Learning Outcomes measurement results into the software						Result of Measurement	1 semester	Result of Measurment Courses Learning Outcomes	
5	Evaluate the achievement of Course Learning based on the measurement results of Courses Learning Outcomes						**Courses Learning Outcomes measurement results, student feedback, student grades**	2 week	Record of improvement for evaluation Courses Learning Outcomes evaluation	
6	Re-measuring Courses Learning Outcomes if the achievement of Courses Learning Outcomes has not been completed (remidi)						Hasil evalusi CPMK,	2 week	assessment tool	
7	Carry out remediation of Courses Learning that have not been completed						Assessment tool	1 day	Result Remedial	
8	Compile a course portfolio						**Courses Learning Outcomes measurement results, student feedback, student grades**	2 week	Portofolio	
9	Evaluate the Courses Learning achievement of each Courses Learning Outcomes						**Courses Learning Outcomes measurement results, student feedback, student grades**	2 week	Result of Measurment Courses Learning Outcomes	
10	Evaluate the portfolio that has been compiled by the lecturer						Portofolio	1 week	Record of improvement	
11	Provide input suggestions for improving the PBM process in the future related to the implementation of OBE						Record of improvement	2 week	Advice of improvement	
12	Make improvements based on PBM evaluation results contained in the portfolio						Advice of improvement	1 week	Record of improvement draftPPM and CPL	
13	Improvement of OBE implementation									

14	Evaluate the Courses Learning Outcomes of students who have graduated						SLO measurement results of students who have graduated	2 week	Result of CP	
15	Putting student Courses Learning Outcomes results into the Diploma Supplement						SLO measurement results of students who have graduated	1 day	Diploma Supplement	

9. ACTIVITY IMPLEMENTER

9.1. Head of Study Program
9.2. Lecturer

10. INTERNAL SUPERVISION

10.1. GPJM
10.2. Assistant Dean 1
10.3. TPJM

11. EXECUTIVE PERFORMANCE EVALUATION

11.1. Head of Study Program

12. DOCUMENT CHANGE HISTORY

NO	REVISION TO	REVISION DATE	BEFORE REVISION	AFTER REVISION	HAL.
1	01				

13. RESPONSE

	Name	Position	Signature	Date
Created By	Ratna Widyati, S.Si., M.Kom	**Chairman of GPJM**	.....	
Checked by	Dr. Muktiningsih, M.Si	**Assistant Dean I**	.....	
Endorsed By	Prof. Dr. Suyono, M.Si	**Dean**	.....	

NO.MK	MK	PLO														
		S1	S2	P1	P2	P3	P4	P5	KK1	KK2	KK3	KK4	KU1	KU2	KU3	KU4
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Basic Physics I		90	90	92				87				90			
2	Basic Physics Practicum I		92	90		90					90		92			
3	Calculus I		90		89				92				90			
4	General Chemistry		90					89	92				92			
5	Indonesian Language	92						90	92				92			
6	Education Overview		90				92				92				92	
7	Pancasila (Five Principles	92					90				91		92			
8	Introduction to Information Technology															
9	Olympism	92						90	92				92			
10	Algorithms and Programming		90		92	92			89				87			
11	Basic Physics 2		90	90	92				92				92			
12	Basic Physics Practicum 2		92	89		90					92		92			
13	Calculus 2		90		89				90				90			
14	General Biology		89					92	90				90			
15	Learner Development		90				89				92				90	
16	Reiligion	90					92				92		92			
17	Science Learning Strategies		90				92				89		89			
18	Introduction to Information		89					92	92				89			
19	Mathematical Physics 1		87	90	90				92				89			
20	Electronics		87	89		90					90		89			
21	Electronics Practicum		89	92		92					92		92			
22	Modern Physics		89	89	90				90				90			
23	Modern Physics Practicum		89		87	89			90				90			
24	Learning and Learning		92				92				90		90		92	
25	Big Data and Programming		90		89	89			90				89			
26	Classical Mechanics		87	90	90				89				87			
27	Mathematical Physics 2		87	89	89				90				90			
28	Waves		89	90	89				87				89			

29	Electricity Magnetism		87	87	89				89				90			
30	Physics Computing		89		90	90			87				89			
31	Physics Computing Practicum		89		90	90			92				90			
32	Logic and Scientific		87				89				89				90	
33	Foundations of Education		90				90				92				92	
34	Thermodynamics		89	87	90				87				89			
35	Quantum Physics		88	89	90				88				90			
36	Introduction to Solid State		87	89	89				90				87			
37	Learning Media Development		92	89			90			90			90			
38	Science Learning		90	90			92					89	90			
39	Curriculum Analysis		90	92			92			90				90		
40	Educational Research		92					89	90				90		90	90
41	Science Learning Design		89	90			87			92				92		
42	Teaching Skills		90				90				92				89	
43	English for Teaching		90					88	92					90		
44	Introduction to Nuclear Physics		87	90	90				90				89			
45	Teaching Material Development		90	92			89			92			90			
46	Research Statistics		90		87				89				90			
47	ICT Based Learning		90				90				90		92			
48	Laboratory Management		90				92				92		90			
49	Earth and Space Physics		92				89				90		90			
50	Special Topics in School Physics		89				90				90		92			
51	Environmental Physics Education		90				90				90		92			
52	Entrepreneurship		90				90				92		92			
53	implementation of teaching material development in schools		89	90			90					92			92	90

54	Implementation of learning media development at school		89	90			90					92			92	90
55	implementation of learning instrumentation in schools		89	90			90					92			92	90
56	Pre-thesis Seminar		92					92	90					90		
57	Thesis		92					90	92					90	90	
58	Statistical Physics		85	90			90			90						
59	Solid States Physics		92	89			92			90						
60	Magnetic Field Theory		90	90			90			92						
61	Digital Electronics			89			90	90				89				
62	Digital Electronics Practicum		90	87	87		92				90					
63	Sensor Technology			89			90	90				87				
64	Thesis			90	90	90	90	90	90	90	90	90	90	90	90	90
65	Environmental Studies in Physics Learning		90				90				90		92			
66	Citizenship Education	90	91													
	Jumlah rata-rata Nilai Capaian pembelajaran	91,2	90	89,6	89,5	90	90,4	90,2	90,1	90,8	90,8	90,1	90,22	90,33	90,92	90
		96,5	91	90,5	96,1	94	92,5	91	93,5	93,5	92,5	93,5	94	90,4	90,4	91

PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
		91					
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		90,25					
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90	87	92	89			91	
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		89,5					
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		89,5					

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			87				
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	90						
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					89		
				90,5			
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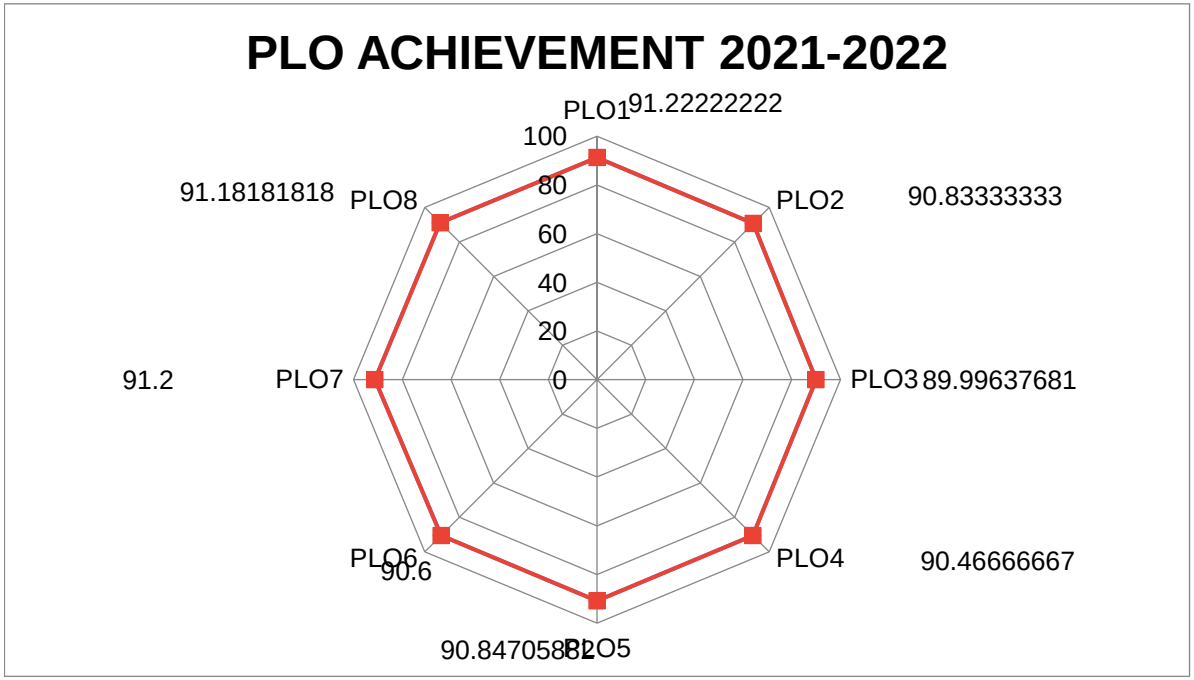
		87					
		89					90
		90					
90							
90							

NO.MK	MK	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
1	Fisika Dasar 1			91					
2	Praktikum Fisika Dasar 1			90					
3	Kalkulus 1				92				
4	Kimia Umum			90,25					
5	Bahasa Indonesia		92						
6	Wawasan Pendidikan	90							
7	Pancasila	92							
8	Olimpisme		92						
9	Algoritma dan Pemrograman	90	87	92	89			91	
10	Fisika Dasar 2			91					
11	Praktikum Fisika Dasar 2			89					
12	Kalkulus 2				90				
13	Biologi Umum			91,66667					
14	Perkembangan Peserta Didik					90,25			
15	Kewarganegaraan	90							
16	Pendidikan Agama	90							
17	Strategi Pembelajaran Sains					90			
18	Pengantar Teknologi Informasi				92				
19	Fisika Matematika 1				92				
20	Elektronika			89					
21	Praktikum Elektronika			92					
22	Fisika Modern			89,5					
23	Praktikum Fisika Modern			87					
24	Teori Belajar dan Pembelajaran					91,2			
25	Data Raya dan Pemrograman				90				
26	Mekanika Klasik			90					
27	Fisika Matematika 2				90				
28	Gelombang			89,5					
29	Listrik Magnet			88					

30	Komputasi Fisika				87				
31	Praktikum Komputasi Fisika				92				
32	Logika dan Penalaran Ilmiah		90						
33	Landasan Pendidikan					91			
34	Termodinamika				87				
35	Fisika Kuantum				88				
36	Pendahuluan Fisika Zat Padat				90				
37	Pengembangan Media Pembelajaran					90			
38	Penilaian Pembelajaran Sains					90,2			
39	Analisis Kurikulum					90			
40	Metodologi Penelitian Pendidikan						90,2		
41	Disain Pembelajaran Sains					92			
42	Ketrampilan Mengajar					90,25			
43	English for Teaching	90							
44	Pendahuluan Fisika Nuklir			90					
45	Pengembangan Bahan Ajar					92			
46	Statistik Penelitian						89		
47	Pembelajaran Berbasis ICT					90,5			
48	Manajemen Laboratorium							92	
49	Fisika Kebumian dan Antariksa			92					90
50	Topik Khusus Fisika Sekolah					90			92
51	Pendidikan Fisika Lingkungan					90			92
52	Kewirausahaan		92						
53	implementasi pengembangan bahan ajar di sekolah					92			92
54	implemntasi pengembangan media pembelajaran di sekolah					92			92
55	implementasi instrumentasi pembelajaran di sekolah					92			92
56	Seminar Pra-Skripsi				90			91	92
57	Skripsi				92			91	90
58	Fisika Statistik			90					

59	Fisika Zat Padat			89					
60	Teori Medan Magnet			90					
61	Elektronika Digital			89					90
62	Praktikum Elektronika Digital			87					
63	Teknologi Sensor			89					90
64	Skripsi	90	90	90	90	90	90	90	90
65	Studi Lingkungan dalam Pembelajaran Fisika	90							
66	Pendidikan Kewarganegaraan	90							
		90,22222	90,5	89,82246	90,06667	90,78824	89,73333	91	91,09091

PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
90,22222	90,5	89,82246	90,06667	90,78824	89,73333	91	91,09091

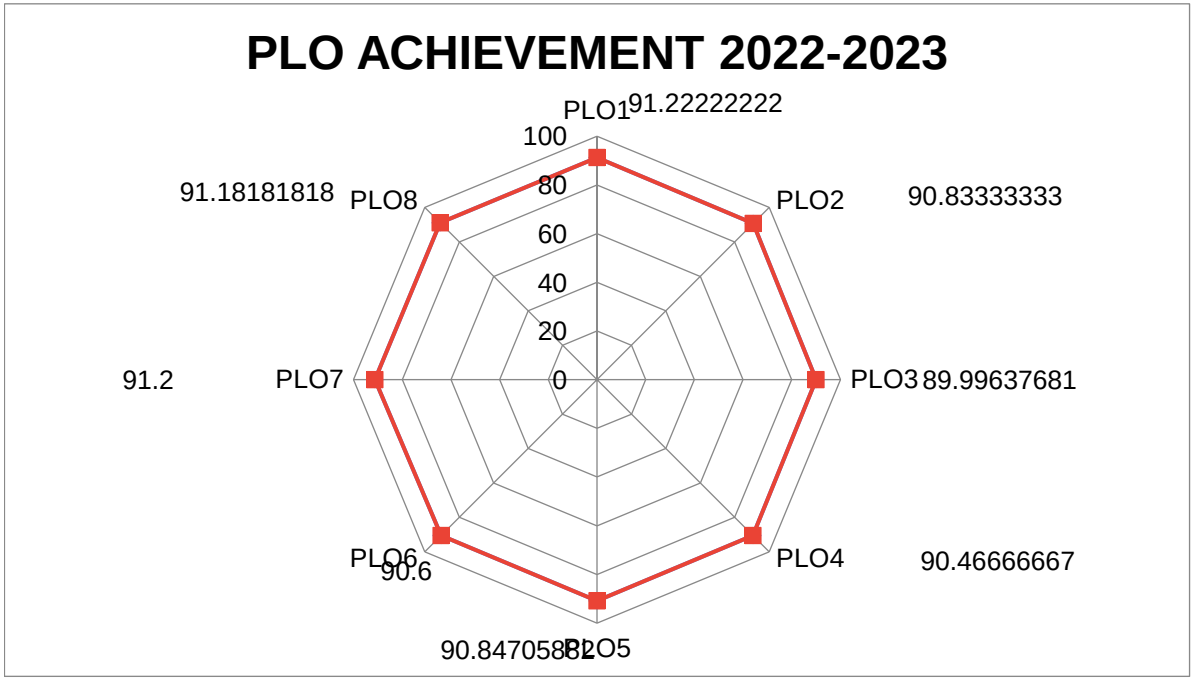


NO.MK	MK	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
1	Fisika Dasar 1			91					
2	Praktikum Fisika Dasar 1			90					
3	Kalkulus 1				92				
4	Kimia Umum			90,25					
5	Bahasa Indonesia		92						
6	Wawasan Pendidikan	92							
7	Pancasila	92							
8	Olimpisme		92						
9	Algoritma dan Pemrograman	94	89	92	89			91	
10	Fisika Dasar 2			91					
11	Praktikum Fisika Dasar 2			89					
12	Kalkulus 2				90				
13	Biologi Umum			91,66667					
14	Perkembangan Peserta Didik					90,25			
15	Kewarganegaraan	90							
16	Pendidikan Agama	90							
17	Strategi Pembelajaran Sains					90			
18	Pengantar Teknologi Informasi				92				
19	Fisika Matematika 1				92				
20	Elektronika			91					
21	Praktikum Elektronika			92					
22	Fisika Modern			89,5					
23	Praktikum Fisika Modern			87					
24	Teori Belajar dan Pembelajaran					91,2			
25	Data Raya dan Pemrograman				90				
26	Mekanika Klasik			90					
27	Fisika Matematika 2				90				
28	Gelombang			89,5					
29	Listrik Magnet			90					

30	Komputasi Fisika				87				
31	Praktikum Komputasi Fisika				92				
32	Logika dan Penalaran Ilmiah		90						
33	Landasan Pendidikan					91			
34	Termodinamika				90				
35	Fisika Kuantum				91				
36	Pendahuluan Fisika Zat Padat				90				
37	Pengembangan Media Pembelajaran					90			
38	Penilaian Pembelajaran Sains					90,2			
39	Analisis Kurikulum					90			
40	Metodologi Penelitian Pendidikan						90,2		
41	Disain Pembelajaran Sains					92			
42	Ketrampilan Mengajar					90,25			
43	English for Teaching	90							
44	Pendahuluan Fisika Nuklir			90					
45	Pengembangan Bahan Ajar					92			
46	Statistik Penelitian						91,6		
47	Pembelajaran Berbasis ICT					90,5			
48	Manajemen Laboratorium							92	
49	Fisika Kebumian dan Antariksa			92					90
50	Topik Khusus Fisika Sekolah					91			92
51	Pendidikan Fisika Lingkungan					90			92
52	Kewirausahaan		92						
53	implementasi pengembangan bahan ajar di sekolah					92			92
54	implemntasi pengembangan media pembelajaran di sekolah					92			92
55	implementasi instrumentasi pembelajaran di sekolah					92			92
56	Seminar Pra-Skripsi				90			92	92
57	Skripsi				92			91	90
58	Fisika Statistik			90					

59	Fisika Zat Padat			89					
60	Teori Medan Magnet			90					
61	Elektronika Digital			89					91
62	Praktikum Elektronika Digital			87					
63	Teknologi Sensor			89					90
64	Skripsi	90	90	90	90	90	90	90	90
65	Studi Lingkungan dalam Pembelajaran Fisika	92							
66	Pendidikan Kewarganegaraan	91							
		91,22222	90,83333	89,99638	90,46667	90,84706	90,6	91,2	91,18182

PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
91,22222	90,83333	89,99638	90,46667	90,84706	90,6	91,2	91,18182



PLO ACHIEVEMENT

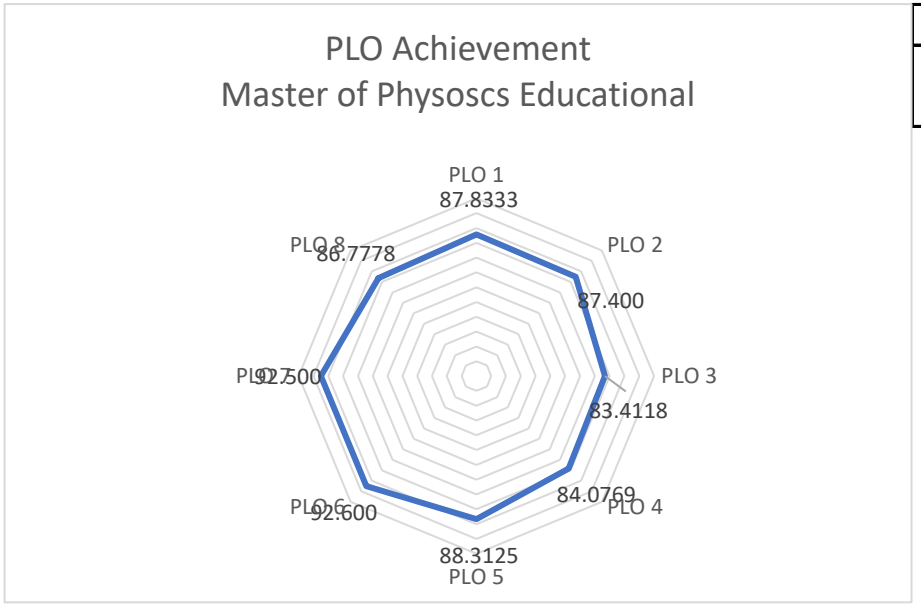
Students Name AMIRA ZAHRA AZHARI
Registrar No 1302619013
Study Program Bachelor of Physics Education

Course Code	Course Name	SKS	ECTS	PLO								
				1	2	3	4	5	6	7	8	
32151013	Basic Physics I	3	4,5			83						A -
32251021	Basic Physics Practicum I	1	1,5			83						A
32151424	Calculus I	3	4,5				80					B -
33150013	General Chemistry	3	4,5			77						B +
00051142	Indonesian Language	2	3		76							B +
00051262	Education Overview	2	3	85								A -
00051122	Pancasila	2	3	83								A -
32152192	Introduction to Information Technology	2	3				81					B
30051121	Olympism	1	1,5		97							A
32151253	Basic Physics II	3	4,5			93						A
32150281	Basic Physics Practicum II	1				88						A
32150334	Calculus II	3	4,5				80					B
34251632	General Biology	2	3			84						A -
00052102	Student Development	2	3					84				A -
32150402	Civic Education	2	3	84								A -
00052033	Religion	2	3	93								A
32151302	Logic and Reasoning	2	3		85							A -
32150252	Science learning strategy	2	3					89				A
32154114	Mathematical Physics I	4	6				83					B
32153154	Electronics	4	6			77						B +
32153021	Electronics Practicum	1	1,5			94						A
32155014	Classical Mechanics	4	6			72						B -
32150173	Modern Physics	3	4,5			79						B +
32156021	Modern Physics Practicum	1	1,5			90						A

30050022	Big Data and Programing	2	3				84					A -
32155114	Mathematical Physics II	4	6				83					A -
32152134	Wave	4	6			71						B
32255044	Electricity and Magnetism	4	6			85						A -
32152022	Computational Physics	3	4,5				82					B +
32152031	Computational Physics Practicum	1	1,5				82					B +
00053074	Foundation of education	3	4,5					88				A
32150213	Quantum Physics	3	4,5				80					B
32153133	Thermodynamics	3	4,5				83					B +
32150243	Introduction to Solid State Physics	3	4,5				84					B
32151183	Learning assessment	2	3					83				A -
32150302	Curriculum analysis	2	3					83				A -
32151152	Development of Physics Learning Media	2	3					81				A -
00052144	Learning theory and learning	2	3					98				A
32151283	Research Method for Education	3	4,5						94			A
32151264	Teaching skills	2	3					88				A
32154053	Statistics for Research	3	4,5						90			A
32156013	Introduction to Nuclear Physics	3	4,5			77						B +
32151242	English for Teaching	2	3	94								A
32151192	Science learning design	2	3					98				A
32150222	Teaching Materials Development	2	3					95				A
30050042	Laboratory management	2	3							88	87	A
32152023	Statistical physics	3	4,5			87					87	A
32150402	Entrepreneurship	2	3		89						89	A
32151332	Environmental Physics Education	2	3			89					87	A
32150322	ICT-based learning of Physics	2	3					89			88	A
KM-00016	Teaching Experience	6	9					91	96	96		A
32150114	Implementing Learning Media Development in Schools	4	6					88			88	A

32150074	Implementation of the development of teaching materials in schools	4	6					72			72	B
32150124	Implementation of instrument development in schools	4	6					94			89	A
30052072	Undergraduate Pre-Thesis Seminar	2	3				93		93	97		A
30054024	Undergraduate Thesis	4	6	88	90	89	98	92	90	89	94	A

87,8	87,4	83,4	84,1	88,3	92,6	92,5	86,8



PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8
87,8	87,4	83,4	84,1	88,3	92,6	92,5	86,8