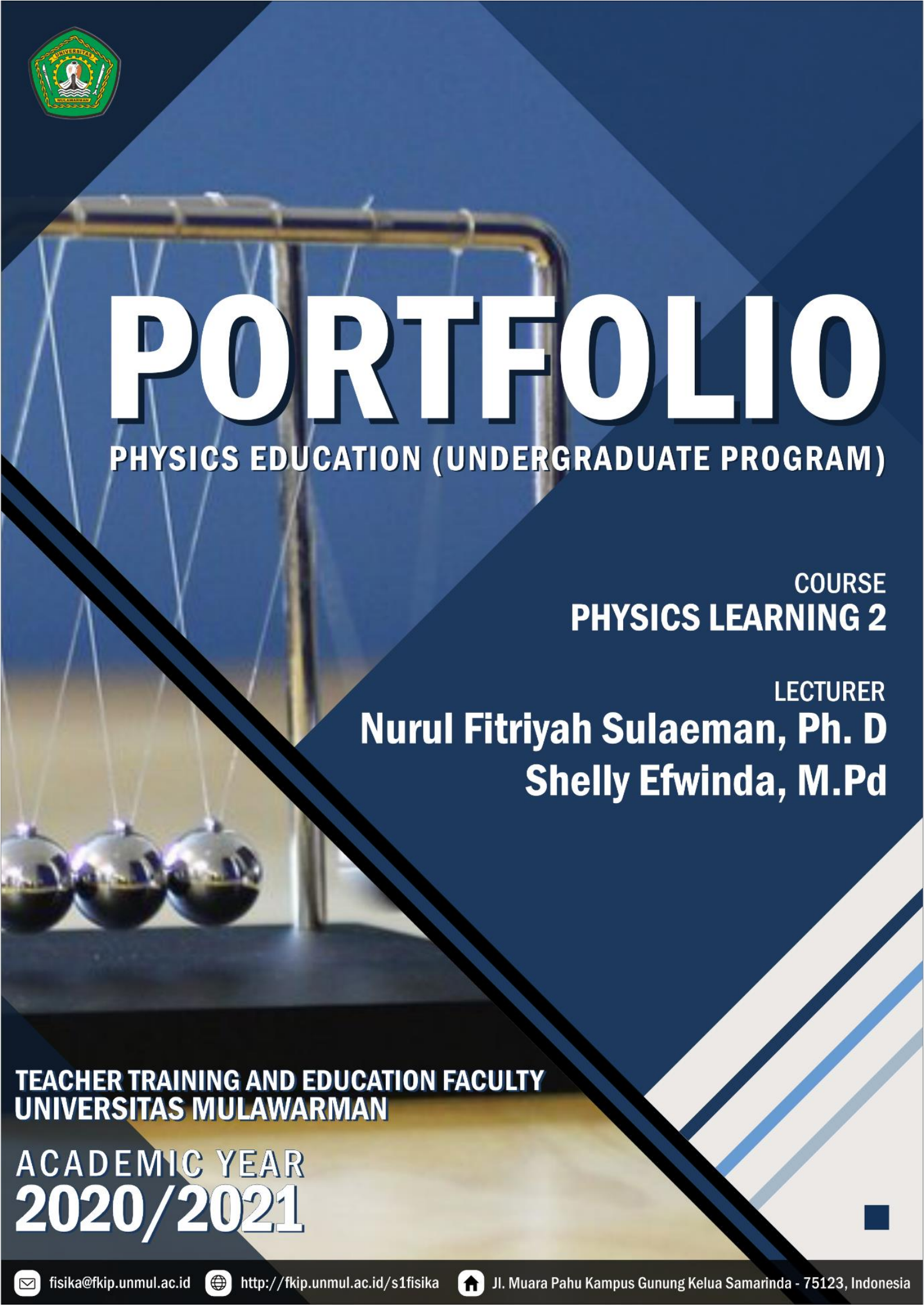


PORTFOLIO

PHYSICS EDUCATION (UNDERGRADUATE PROGRAM)

COURSE

PHYSICS LEARNING 2

LECTURER

Nurul Fitriyah Sulaeman, Ph. D
Shelly Efwinda, M.Pd

TEACHER TRAINING AND EDUCATION FACULTY
UNIVERSITAS MULAWARMAN

ACADEMIC YEAR
2020/2021

fisika@fkip.unmul.ac.id http://fkip.unmul.ac.id/s1fisika Jl. Muara Pahu Kampus Gunung Kelua Samarinda - 75123, Indonesia

PORTFOLIO

PHYSICS LEARNING 2 COURSE

THE ACADEMIC YEAR 2020/2021

MODULE COORDINATOR:

Shelly Efwinda, S.Pd., M.Pd.

LECTURERS:

Nurul F. Sulaeman, M.Pd., Ph.D.

Shelly Efwinda, S.Pd., M.Pd

Email:

shelly.efwinda@fkip.unmul.ac.id

Physics Education Study Program

Teacher Training and Education Faculty

Mulawarman University

2021

LIST OF CONTENTS

A. SEMESTER LESSON ACTIVITY PLAN

A.1 COURSE IDENTITY

<table>
<tr><td>Module name:</td><td>Physics Learning 2</td></tr>
<tr><td>Module level, if any</td><td>Bachelor</td></tr>
<tr><td>Code, if any</td><td>19050363W045</td></tr>
<tr><td>Subtitles, if any</td><td>-</td></tr>
<tr><td>Class,if any</td><td>-</td></tr>
<tr><td>Semester in which modules are taught</td><td>6</td></tr>
<tr><td>In charge of modules</td><td>Shelly Efwinda, M.Pd</td></tr>
<tr><td>Teacher</td><td>Nurul Fitriyah Sulaeman, Ph.D.
Shelly Efwinda, M.Pd</td></tr>
<tr><td>Language</td><td>Bahasa</td></tr>
<tr><td>It has to do with the curriculum.</td><td>Compulsory Courses</td></tr>
<tr><td>Type of teaching, contact hours</td><td>150 minutes of lectures, 180 minutes of structured activities, and 180 minutes of individualized learning per week for 16 weeks.</td></tr>
<tr><td>Workload</td><td>The total workload of 272 hours per semester consists of 150 minutes of lectures, 180 minutes of structured activities in the form of projects designing learning planning with various learning models, and 180 minutes of individual learning per week for 16 weeks.</td></tr>
<tr><td>Credit points</td><td>3 Credits (4. 77 ETCS) 1 credit = 1.59 etcs</td></tr>
<tr><td>Recommended prerequisites</td><td>Physics Learning 1</td></tr>
<tr><td>Module objectives/expected learning outcomes</td><td>After this course, students have the ability to:
1. Apply content knowledge in planning Physics learning at the high school level
2. Apply pedagogical knowledge in planning physics learning at the high school level
3. Apply technological knowledge in planning physics learning at the high school level</td></tr>
<tr><td>Content</td><td>This course discusses the application of technology-pedagogy-content-knowledge in high school physics learning. The discussion began from the introduction of the definition of TPACK and its component components, the breadth and depth of high school physics materials, scientific and scientific reasoning methods, content standards (curriculum) relevant to the demands of the National Standard of Education and the application of TPACK in the management of physics learning at the high school level.</td></tr>
<tr><td>Study and exam requirements and exam forms</td><td>Assessment of the evaluation of the learning process and attitude demonstration can be shown as follows:
<table>
<tr><th>No.</th><th>Assessment Object</th><th>Form of Assessment</th><th>Weight (%)</th></tr>
<tr><td>1</td><td>College participation (online)</td><td>Online presence</td><td>10</td></tr>
<tr><td>2</td><td>Individual/group tasks</td><td>Study group presentation</td><td>20</td></tr>
</table>
</td></tr>
</table>

			& Q&A discussion	
	3	Midterms	Written test	30
	4	End of Semester Exam	Written test	40
	TOTAL			100
Media used	Hardware : Notebook/Computer/Mobile Software: Ms. Power Point, Zoom, and Mols			
Bibliography	1. Amanda Berry, Patricia Friedrichsen, John Loughran. (2015). Re-examining Pedagogical Content Knowledge in Science Education. London: Taylor& Francis. 2. Bayram-Jacobs, et al. (2019). Science teachers' pedagogical content knowledge development during enactment of socioscientific curriculum materials. *Journal of Research in Science Teaching*. Wiley Periodicals, Inc. 3. Ministry of Education and Culture. 2017. High School Physics Curriculum. Jakarta: Kemendikbud. 4. Elstad, Eyvind. (2016). Digital Expectation and Experiences in Education. Rotterdam: Sense Publisher. 5. Kilbane, C.R. & Milman, N.B. (2014). Teaching Models: Designing Instruction for 21st Century Learning. Pearson Education			

A.2 COURSE TOPIC

This course discusses the application *of technology-pedagogy-content-knowledge* in high school physics learning. The discussion began from the introduction of the definition of TPACK and its component components, the breadth and depth of high school physics materials, scientific methods and scientific *reasoning*, content standards (curriculum) relevant to the demands of the National Standard of Education and the application of TPACK in the management of physics learning at the high school level.

A.3 COURSE PROGRAM

	MINISTRY OF EDUCATION AND CULTURE **MULAWARMAN UNIVERSITY** **FACULTY OF TEACHER TRAINING AND IMU EDUCATION** **PHYSICS** EDUCATION STUDY PROGRAM	No. Doc	045/P.Physics/RPS/2017
		Tgl Terbit	January 5, 2021
		No Revision	045/P.Physics/RPS/2021
		Thing	7

LESSON PLAN					
Courses	**Course Code**	**College Courses**	**Credit**	**Semester**	**Drafting Date**
Physics Learning 2	19050363W045	Study Program	3	VI	January 2, 2021
Authorization	**Course Coordinator**	**Lectures**		**Study Program Coordinator**	
	Nurul F. Sulaeman, Ph.D.	**1. Nurul F. Sulaeman, Ph.D.** **2. Shelly Efwinda, M.Pd**		**Dr. Riskan Qadar, M.Si**	

Learning Outcomes (LO)	**Program Learning Outcomes**	
	Knowledge	K-02. Applying technology, pedagogy, content, knowledge in physics learning
	Specifics Skills	SS-01. Have the skills to plan, implement and evaluate learning and teaching physics
	Course Learning Outcomes	
	CLO 1	Apply content knowledge in planning Physics learning at the high school level
	CLO 2	Apply pedagogical knowledge in planning physics learning at the high school level
	CLO 3	Apply technological knowledge in planning physics learning at the high school level
Integrated PIP Unmul		

Course Description	This course discusses the application of technology-pedagogy-content-knowledge in high school physics learning. The discussion began from the introduction of the definition of TPACK and its component components, the breadth and depth of high school physics materials, scientific and scientific reasoning methods, content standards (curriculum) relevant to the demands of the National Standard of Education and the application of TPACK in the management of physics learning at the high school level.
Reference	1. Amanda Berry, Patricia Friedrichsen, John Loughran. (2015). Re-examining Pedagogical Content Knowledge in Science Education. London: Taylor& Francis. 2. Bayram-Jacobs, et al. (2019). Science teachers' pedagogical content knowledge development during enactment of socioscientific curriculum materials. *Journal of Research in Science Teaching*. Wiley Periodicals, Inc. 3. Ministry of Education and Culture. 2017. High School Physics Curriculum. Jakarta: Kemendikbud. 4. Elstad, Eyvind. (2016). Digital Expectation and Experiences in Education. Rotterdam: Sense Publisher. 5. Kilbane, C.R. & Milman, N.B. (2014). Teaching Models: Designing Instruction for 21st Century Learning. Pearson Education
Learning Media	**Software:** / Ms. Power Point, Zoom, and Mols **Hardware:** / Notebook/Computer/Mobile
Pre-requisite course (If any)	Physics Learning 1

Meeting	Sub CLO	Indicators	Study Materials	Learning Strategies (Models and Methods)	Student Learning Experience	Valuation			Reference
						Kind	Criterion	Weight (%)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Understanding Pedagogical Content Knowledge (PCK) and Technological, Pedagogical and Content Knowledge (TPACK) and their components	1. Explain the understanding of PCK 2. Verifying PCK coverage 3. Qualified the importance of PCK ability to have teachers and	PCK and TPACK	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss pedagogical content knowledge (PCK) and technological, pedagogical and content knowledge (TPACK) and its components.	Written Test	Truth of Answer	1%	1 and 2

		prospective teachers							
2	Understanding Pedagogical Content Knowledge (PCK) and Technological, Pedagogical and Content Knowledge (TPACK) and their components	1. Explaining the meaning of TPACK 2. Definition of TPACK components 3. Understanding the importance of TPACK's ability to have teachers and prospective teachers	PCK and TPACK	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss pedagogical content knowledge (PCK) and technological, pedagogical and content knowledge (TPACK) and its components.	Written Test	Truth of Answer	1%	1 and 2
3	Apply content knowledge in high school physics materials	1. Make a video lecture on one of the high school physics materials 2. Create a mind map or concept map or diagrid flow one of the high school physics materials	High School Physics Content	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss content in high school physics materials	Written Test	Truth of Answer	1%	3
4	Understand the characteristics of Approaches, Strategies, Methods & Learning Models in general	1. Clarify understanding and differences Approach, Strategy, Methods & Models Of Learners 2. Identify approaches, strategies, methods and learning models that correspond to high school physics learning	Approaches, Strategies, Methods & Learning Models that correspond to Physics Subjects	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss the characteristics of Approaches, Strategies, Methods &Learning Models in general	Written Test	Truth of Answer	1%	5

5	Understand the characteristics of the High School Physics Learning Approach: Scientific Approach Inquiry Approach STEM approach	1. Explaining the characteristics of the Scientific Approach and its conformity with High School Physics Materials 2. Explaining the characteristics of the Inquiry Approach and its conformity with High School Physics Materials 3. Explaining the characteristics of the STEM Approach and its suitability to high school physics	High school physics learning approach: Scientific Approach Inquiry Approach STEM approach	Cooperative Learning: Group discussions	Students discuss and present in groups about the High School Physics Learning Approach: Scientific Approach Inquiry Approach STEM approach	Written Test	Truth of Answer	2%	5
6	Understand the characteristics of high school physics learning models: PBL, PjBL, Discovery, Inquiry, Blended Learning, etc.	1. Explaining the characteristics of the PBL Model and its conformity with High School Physics Materials 2. Explaining the characteristics of the PjBL Model and its conformity with High School Physics Materials 3. Explaining the characteristics of the Discovery Model and its compatibility with High School Physics Materials 4. Explaining the characteristics of the Inquiry Model and its conformity	High school physics learning models: PBL, PjBL, Discovery, Inquiry, Blended Learning, etc.	Cooperative Learning: Group discussions	Students discuss and present in groups about the characteristics of high school Physics Learning Models: PBL, PjBL, Discovery, Inquiry, Blended Learning, etc.	Written Test	Truth of Answer	2%	5

		to high school physics 5. Explaining the characteristics of the Blended Learning Model and its conformity with High School Physics Materials							
7 - 8	Apply technological knowledge in Physics Learning Assessment	1. Explain the utilization and application of technology in The Assessment of Physical Learning 2. Create a physics learning evaluation test through technology applications	Utilization and Application of Technology in Assessment of Physical Learning	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss the Utilization and Application of Technology in The Assessment of Physical Learning	Written Test	Truth of Answer	2%	4
9	Apply content knowledge and pedagogy in understanding the high school Physics curriculum	Understand the high school physics curriculum	High School Physics Curriculum	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss the high school physics curriculum	Written Test	Truth of Answer	2%	4
10	Apply content knowledge and pedagogy in determining learning steps	1. Understand the syntax learning model 2. Create a learning flow	Learning flow development	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss how to apply content knowledge and pedagogy in developing learning flows	Written Test	Truth of Answer	2%	4
11	Apply content knowledge and pedagogy in creating student worksheets (Case in STEM learning)	1. Understand the syntax learning model 2. Create student worksheets in STEM learning	Development of student worksheets	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss how to apply content knowledge and pedagogy in developing student worksheets	Written Test	Truth of Answer	2%	4

12	Apply content knowledge and pedagogy in creating student worksheets (Case in problem-based learning)	1. Understand the syntax learning model 2. Create student worksheets in problem-based learning	Development of student worksheets	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss how to apply content knowledge and pedagogy in developing student worksheets	Written Test	Truth of Answer	2%	4
13	Applying content knowledge and pedagogy in creating student *worksheets (Case in engineering design process)*	1. Understand the syntax learning model 2. Create student worksheets in engineering design process learning	Development of student worksheets	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss how to apply content knowledge and pedagogy in developing student worksheets	Written Test	Truth of Answer	2%	4
14	Apply content knowledge and pedagogy in creating a learning implementation plan (RPP)	1. Understand the syntax learning model 2. Create a learning implementation plan	Development of learning implementation plan	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss how to apply content knowledge and pedagogy in developing learning implementation plans	Written Test	Truth of Answer	2%	4
15 -16	Understand the urgency of TPACK and PCK internationally oriented physics learning (OECD PISA)	Understanding scientific approaches according to OECD PISA	Scientific approach according to OECD PISA	Direct Instruction: Lectures and Q&A	Students listen to explanations and discuss scientific approaches according to OECD PISA	Written Test	Truth of Answer	2%	4

Samarinda, January 5, 2021

Study Program Coordinator

Dr. Riskan Qadar, M.Si
NIP 196409251992031002

Course Coordinator

Nurul F. Sulaeman, Ph.D.
NIP 19870920 201504 2 005

A.4 MAPPING OF PROGRAMME LEARNING OUTCOME (PLO) AND COURSE LEARNING OUTCOME (CLO)

A.4.1 EXPECTED PROGRAMME LEARNING OUTCOME (PLO) IN PHYSICS EDUCATION UNDERGRADUATE PROGRAM

Aspect	Code	Description
Knowledge	PLO 1	Understand basic concepts, principles, theories, laws, branches of classical physics and get to know modern physics
	PLO 2	Applying *technology, pedagogy, content, knowledge* in physics learning
	PLO 3	Applying the concept of physics in solving physics problems
	PLO 4	Understand the interrelationship *of science-technology-engineering-mathematics* and other related fields of science
General Skill	PLO 5	Have the ability to learn and deepen knowledge to a higher level
	PLO 6	Able to communicate and present well in Indonesian and familiar with English
	PLO 7	Consider scientific ethics and professional principles and have responsible skills and cooperate
Specific Skill	PLO 8	Have the skills to plan, implement and evaluate learning and teaching physics
	PLO 9	Have the skills to plan, implement and report the results of a physics practicum
	PLO 10	Have skills to design physical learning media and physics experiments

A.4.2 EXPECTED COURSE LEARNING OUTCOME (CLO) IN PHYSICS LEARNING 2 COURSE

CLO 1	Apply content knowledge in planning Physics learning at the high school level
CLO 2	Apply pedagogical knowledge in planning physics learning at the high school level
CLO 3	Apply technological knowledge in planning physics learning at the high school level

A.4.3 PLO-CLO MAPPING

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10
CLO1		√			√					
CLO2		√			√					
CLO3		√			√					

B. COURSE ASSESSMENT

B.1 ASSESSMENT RUBRIC

No.	Assessment Objectives	Related CLO	Assessment	Criteria
1	Class attendance and assignments punctuality		Activity	Participation and punctuality
2	Individual/group projects	CLO 1, CLO 2, CLO 3	Written test and video making	The answer's correctness and completeness
3	Midterms	CLO 1, CLO 2, CLO 3	Written test	The answer's correctness and completeness
4	Final Exam	CLO 1, CLO 2, CLO 3,	Written test	The answer's correctness and completeness

B.2 ASSESSMENT SYSTEM

The scoring of the microteaching course refers to one of the schemes set out in the academic regulations of FKIP UNMUL, as presented in the following table:

No.	Assessment Objectives	Assessment	Value (%)
1	Class participation (online)	Online attendance	10
2	Individual/group projects	Written test	20
3	Midterms	Written test	30
4	Final Exam	Written test	40
TOTAL			100

The weight value of the course is determined based on the quality score which refers to the academic regulations of FKIP UNMUL, as presented in the following table:

Score (S)	Weigh (W)	Letter Value (LV)
$0 \leq S < 40$	0,0	E
$40 \leq S < 50$	1,0	D
$50 \leq S < 60$	1,5	
$60 \leq S < 65$	2,0	C
$65 \leq S < 70$	2,5	
$70 \leq S < 75$	3,0	B
$75 \leq S < 80$	3,5	
$80 \leq S \leq 100$	4,0	A

C. COURSE DEVELOPMENT

C.1 THE ACADEMIC YEAR 2020/2021 COURSE OUTCOME

Parameter	Student Amount	Percentage
The number of students taking the course	41 Students	100%
The number of students passing the course (>E)	39 Students	95,12%
The number of students needed to retake the exam	2 Students	4,88%
The number of students who failed after retaking the exam	2 Students	4,88%

C.2 PROBLEM ANALYSIS

The results of learning achievements in the Physics Learning Course 2 in the academic year 2020/2021 obtained an average learning score of 75.43. Although experiencing an increase with the average learning results of the previous academic year, these results need to be improved again to be more optimal because some students still exist who get categories of grades C, D, even grade E. Students who get E grades are declared not to graduate in this course, and number 2 people. Lecturers who have tried to communicate with the student to provide remedial opportunities, but because of the many obstacles experienced by the student following the lecture remotely, the opportunity is not used by the student concerned.

C.3 PROBLEM SOLVING STRATEGY

There are still some students who have difficulty in mastering learning achievements that are expected to be achieved in this course. So, in the next Academic Year, we plan to:

a. interview students who are still in the category enough and under that category to find out what obstacles are experienced in physics learning courses 2.
b. make interview answers as a consideration in designing learning strategies that will be used in physics learning courses 2
c. design learning by paying attention to the initial ability of students, characteristics of students, distance lecture methods, etc.
d. If needed, redesign the lecture material in accordance with the conditions of the distance lecture (PPT slides, course content, etc.), to make it more contextual so that it is easier for students to understand.
e. add meetings that can facilitate students to study actively so that students can build their own knowledge and learn more meaningfully provide more opportunities for students who wish to study this material outside of lesson hours.

D. ATTACHMENT
D.1 COURSE ACTIVITY DOCUMENTS
D.1.1 STUDENT ATTENDANCE LIST EXAMPLE
2018 A Class Attendance List

Requirement : Present : given 1 score

Not Present : given 0 score

No.	NIM	NAME	GENDER	PRESENCE																RECAPITULATION			
				Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.				
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	TARGET	N	(N/16)100	10%
1	1805035002	SYLVIA NOVARIANA	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
2	1805035003	FITRIYA DIYAN SARI	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
3	1805035004	DIANA ROSANTI	P	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	16	15	93,75	9,375
4	1805035006	RAHMAN SETIYAWAN	L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
5	1805035007	NITA RANANDA	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
6	1805035008	HAIRUN NISA	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
7	1805035010	MELI YUNIAR FITRIYANTI	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
8	1805035011	MUHAMMAD ZULKIFLI OKTA ANANDA	L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
9	1805035012	RHEIMA AFFILIA	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
10	1805035013	SEPTYANI QUARTER OF	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
11	1805035014	RISKI AMALIA	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
12	1805035016	AMELIA UTAMI	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
13	1805035017	JULIA PRINCESS MAHARANI	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
14	1805035018	MUHAMMAD SYARIF HIDAYATULLAH	L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
15	1805035019	SHAFIRA AULIA PUTRI	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
16	1805035020	LOLA JOVITA	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
17	1805035021	PRINCESS ALAYDA ROHALI	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
18	1805035022	FANZURUNI FAUHATUN MABRURAH	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
19	1805035023	VERNANDA ADI SAPUTRA	L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10

2018 B Class Attendance List

No.	NIM	NAME	GENDER	PRESENCE																RECAPITULATION			
				Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.	Pert.				
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	TARGET	N	(N/16)100	10%
1	1805035024	DIZTA OKTARI PAUKIRAN	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
2	1805035025	SLAMET DINI TIARA M.	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
3	1805035026	NIA PARAMITA	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
4	1805035027	SAHRUL GUNAWAN	L	1	1	1	1	1	1	1	1	1	1	1	A	A	1	1	1	16	14	87,5	8,75
5	1805035028	LUSIANAWATI	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
6	1805035029	AYU AVIRA KASTIAWATI	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
7	1805035030	HENDRIK PAJRIANSYAH	L	1	1	A	1	1	1	A	1	A	A	A	A	A	1	1	1	16	9	56,25	5,625
8	1805035031	OCTAVIANI MUTMAINAH	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
9	1805035032	DHEA AMANDA'S DAUGHTER	P	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	16	15	93,75	9,375
10	1805035033	ZAKIYATUZZAHRA	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
11	1805035034	ROSYTHA TRI ANGGRAYNIE	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
12	1805035035	SONIA AYU RIANI	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
13	1805035036	RORO DINDA ALTHAF F.Z.A	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
14	1805035037	FEBRY AZHARI	P	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	16	15	93,75	9,375
15	1805035038	SULATRI ISMAIL	P	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	16	15	93,75	9,375
16	1805035039	NIA PUTRI WULANDARI	P	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	16	15	93,75	9,375
17	1805035040	SUHATRI ISMAIL	P	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	16	15	93,75	9,375
18	1805035041	ELMA LEASES LANGI'	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
19	1805035042	DEVI SIANTURI	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
20	1805035043	FAISAL RAMADHANI	L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
21	1805035044	MARIA CELVI ADVENIA MONE	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10
22	1805035047	RACHEL NOVENTRIANI	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	16	100	10

D.1.2 LECTURER'S TEACHING ACTIVITY MONITORING EXAMPLE

D.1.2.1 2018 Regular A Class Monitoring

	FACULTY OF TEACHER TRAINING AND EDUCATION MULAWARMAN UNIVERSITY	
	MONITORING OF TEACHING ACTIVITIES OF LECTURERS EVEN SEMESTER TA. 2020/2021	
Dept/Program/Class	PMIPA/Physics Education/Class A	Credits: 3
Code/Course	19050363W045 **Physics Learning 2**	
Course Type	THEORY / PRACTICE	Thing 1 of 1
Master Lecturer	Nurul F. Sulaeman, Ph.D. and Shelly Efwinda, M.Pd.	

No.	Meeting to	Day/Date	Subject Matter	Hour		Number of students
				Enter	Out	
1	Meeting 1	Monday, 8 February 2021	Introduction: PCK and TPACK	07.30 WITA	10.00 WITA	19 students
2	Meeting 2	Monday, 15 February 2021	PCK and TPACK	07.30 WITA	10.00 WITA	19 students
3	Meeting 3	Monday, 22 February 2021	High School Physics Content	07.30 WITA	10.00 WITA	19 students
4	Meeting 4	Monday, 1 March 2021	Approaches, Strategies, Methods & Learning Models that correspond to Physics Subjects	07.30 WITA	10.00 WITA	19 students
5	Meeting 5	Monday, 8 March 2021	High school physics learning approach: Scientific Approach Inquiry Approach STEM approach	07.30 WITA	10.00 WITA	19 students
6	Meeting 6	Monday, 15 March 2021	High school physics learning models: PBL, PjBL, Discovery, Inquiry, Blended Learning, etc.	07.30 WITA	10.00 WITA	19 students
7	Meeting 7	Monday, 22 March 2021	Utilization and Application of Technology in Assessment of Physical Learning	07.30 WITA	10.00 WITA	19 students
8	Meeting 8	Monday, 5 April 2021	Midterms	07.30 WITA	10.00 WITA	19 students
9	Meeting 9	Monday, 12 April 2021	High School Physics Curriculum	07.30 WITA	10.00 WITA	19 students
10	Meeting 10	Monday, 19 April 2021	Learning flow development	07.30 WITA	10.00 WITA	19 students

11	Meeting 11	Monday, 26 April 2021	Development of student worksheets	07.30 WITA	10.00 WITA	19 students
12	Meeting 12	Monday, 3 May 2021	Development of student worksheets	07.30 WITA	10.00 WITA	18 students
13	Meeting 13	Monday, 10 May 2021	Development of student worksheets	07.30 WITA	10.00 WITA	19 students
14	Meeting 14	Monday, 17 May 2021	Development of learning implementation plan	07.30 WITA	10.00 WITA	19 students
15	Meeting 15	Monday, 24 May 2021	*Scientific approach* according to OECD PISA	07.30 WITA	10.00 WITA	19 students
16	Meeting 16	Friday, June 4, 2021	UAS	07.30 WITA	10.00 WITA	19 students

D.1.2.1 2018 Regular B Class Monitoring

	FACULTY OF TEACHER TRAINING AND EDUCATION MULAWARMAN UNIVERSITY					
	MONITORING OF TEACHING ACTIVITIES OF LECTURERS EVEN SEMESTER TA. 2020/2021					
Dept/Program/Class	PMIPA/Physics Education/Class B					Credits: 3
Code/Course	19050363W045	**Physics Learning 2**				
Course Type	THEORY / PRACTICE					Thing 1 of 1
Master Lecturer	Nurul F. Sulaeman, Ph.D. and Shelly Efwinda, M.Pd.					
No.	**Meeting to**	**Day/Date**	**Subject Matter**	**Hour**		**Number of students**
				Enter	**Out**	
1	Meeting 1	Thursday, 11 February 2021	Introduction: PCK and TPACK	13.00 WITA	3.30PM	22 students
2	Meeting 2	Thursday, 18 February 2021	PCK and TPACK	13.00 WITA	3.30PM	22 students
3	Meeting 3	Thursday, 25 February 2021	High School Physics Content	13.00 WITA	3.30PM	21 students
4	Meeting 4	Thursday, 4 March 2021	Approaches, Strategies, Methods & Learning Models that correspond to Physics Subjects	13.00 WITA	3.30PM	22 students
5	Meeting 5	Thursday, 11 March 2021	High school physics learning approach: Scientific Approach Inquiry Approach STEM approach	13.00 WITA	3.30PM	21 students
6	Meeting 6	Thursday, 18 March 2021	High school physics learning models: PBL, PjBL, Discovery, Inquiry, Blended Learning, etc.	13.00 WITA	3.30PM	20 students
7	Meeting 7	Thursday, 25 March 2021	Utilization and Application of Technology in Assessment of Physical Learning	13.00 WITA	3.30PM	20 students
8	Meeting 8	Thursday, 8 April 2021	Midterms	13.00 WITA	3.30PM	22 students
9	Meeting 9	Thursday, 15 April 2021	High School Physics Curriculum	13.00 WITA	3.30PM	21 students
10	Meeting 10	Thursday, 22 April 2021	Learning flow development	13.00 WITA	3.30PM	20 students
11	Meeting 11	Thursday, 29 April 2021	Development of student worksheets	13.00 WITA	3.30PM	21 students

12	Meeting 12	Thursday, 6 May 2021	Development of student worksheets	13.00 WITA	3.30PM	20 students
13	Meeting 13	Thursday, 13 May 2021	Development of student worksheets	13.00 WITA	3.30PM	20 students
14	Meeting 14	Thursday, 20 May 2021	Development of learning implementation plan	13.00 WITA	3.30PM	22 students
15	Meeting 15	Thursday, 27 May 2021	*Scientific approach* according to OECD PISA	13.00 WITA	3.30PM	22 students
16	Meeting 16	Friday, June 4, 2021	UAS	07.30 WITA	10.00 WITA	22 students

D.1.3 EXAMINATION RECORD EXAMPLE

D.1.3.1 2018 A Class Examination Record

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS MULAWARMAN
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN

BERITA ACARA
PROGRAM STUDI S1 - PENDIDIKAN FISIKA
SEMESTER 2020/2021 GENAP

Mata Ujian : Pembelajaran Fisika 2
Hari, Tanggal Ujian : Jum'at, 4 Juni 2021
Pukul : 07.30-10.00 WITA
Tempat Ujian :
Jumlah Peserta Ujian : 18
Jumlah Peserta Hadir : 18
Jumlah Peserta Tidak Hadir : -
Dosen Penguji : Nurul F. Sulaeman, Ph.D., dan Shelly Efwinda, M.Pd

CATATAN PE LAKSANAAN UJIAN

Ujian berjalan dengan tertib dan lancar

PENGAWAS UJIAN

No.	Nama	Jabatan	Tanda Tangan	
1.	Nurul F. Sulaeman, Ph.D.	Dosen/Pengawas	1.	
2.	Shelly Efwinda, M.Pd	Dosen/ Pengawas		2.
3.			3.	
4.				4.
5.			5.	

Samarinda, ...
an. Dekan
Wakil Dekan Bidang Akademik,

Dr. H. ZULKARNAEN, M.Si
NIP:196712241991021001

D.1.3.2 2018 B Class Examination Record

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS MULAWARMAN
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN

BERITA ACARA
PROGRAM STUDI S1 - PENDIDIKAN FISIKA
SEMESTER 2020/2021 GENAP

Mata Ujian : Pembelajaran Fisika 2
Hari, Tanggal Ujian : Senin, 31 Mei 2021
Pukul : 07.30-10.00 WITA
Tempat Ujian : Mols
Jumlah Peserta Ujian : 23
Jumlah Peserta Hadir : 23
Jumlah Peserta Tidak Hadir : -
Dosen Penguji : Nurul F.S., Ph.D & Shelly Eguinda, M. Pd

CATATAN PE LAKSANAAN UJIAN

Berjalan lancar dan tertib

PENGAWAS UJIAN

No.	Nama	Jabatan	Tanda Tangan	
1.	Nurul F.S	Dosen / Pengawas	1.	
2.	Shelly Eguinda	Dosen / Pengawas		2.
3.			3.	
4.				4.
5.			5.	

Samarinda, ...
an. Dekan
Wakil Dekan Bidang Akademik,

Dr. H. ZULKARNAEN, M.Si
NIP:196712241991021001

D.2 STUDENT'S WORK EXAMPLE

D.2.1 EXAMINATION WORKSHEET EXAMPLE

	FACULTY OF TEACHER TRAINING AND EDUCATION MULAWARMAN UNIVERSITY			
	FINAL EXAM OF THE SEMESTER EVEN TA. 2020/2021			
Dept/Program/Class	PMIPA/Physics Education/2018 A and 2018 B			Credits: 3
Code/Course	19050363 W045	**Physics** Learning **2**		
Course Type	THEORY / ~~PRACTICE~~		Nature of the Exam : **Close Book**/Open Book /~~**Take Home**~~	Thing 1 of 1
Rule: 1. HP is inactive and not used during the exam 2. It is forbidden to cooperate and commit fraudulent acts.				
Master Lecturer				
Day: Friday	Tgl. : June 4, 2021	Starts at: 07.30 to 10.00 WITA		Space: GB 25/MOLS

Learning Program Achievement (Learning*Outcome Program)*to be achieved	
PLO 2	Applying technology, pedagogy, content, knowledge in physics learning
PLO 5	Have the skills to plan, implement and evaluate learning and teaching physics

Achievement of Course*Learning Outcome* tobe achieved	
CLO 1	Apply content knowledge in planning Physics learning at the high school level
CLO 2	Apply pedagogical knowledge in planning physics learning at the high school level
CLO 3	Apply technological knowledge in planning physics learning at the high school level

CLO 1: Apply content knowledge in planning Physics learning at high school level
Instructions on Question 1: It is the main task of a teacher to deliver the material with good mastery. If you are asked to teach at the following KD: Analyze the heat and heat transfer influences that include the thermal characteristics of a material, the capacity, and conductivity of heat in everyday life. Make the flow of mastery of the material by considering scientific reasoning!

CLO 2: Apply pedagogical knowledge in planning physics learning at high school level
Instructions on Question 1: Design a semester program for high school physics learning. The design includes, what materials are taught, and using what learning model per material? Do you know why the plan you submitted?

CLO 3: Apply technological knowledge in planning physics learning at high school level
Instructions on Question 1: Among the physical materials that must be taught at the high school level, there are some materials that are microscopic in nature such as the ideal gas theory. Many teachers find it difficult to convey this material properly so that students can ipahamioleh. As a future teacher candidate, what is your idea for physics learning on this topic? Design a 45-minute meeting on the material using technology that helps students understand!

Made by: Nurul F. Sulaeman, Ph.D. Shelly Efwinda, M.Pd	It is forbidden to reproduce part or all of the contents of the document without written permission from koor. Physics Education Study Program Faculty of Teacher Training and Education Mulawarman University	Verified by Koor. Prodi Pend. Physics Dr. H. Riskan Qadar, M. Si.

D.2.2 STUDENT'S EXAMINATION ANSWER EXAMPLE

FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN
UNIVERSITAS MULAWARMAN

UJIAN AKHIR SEMESTER GENAP TA. 2020/2021

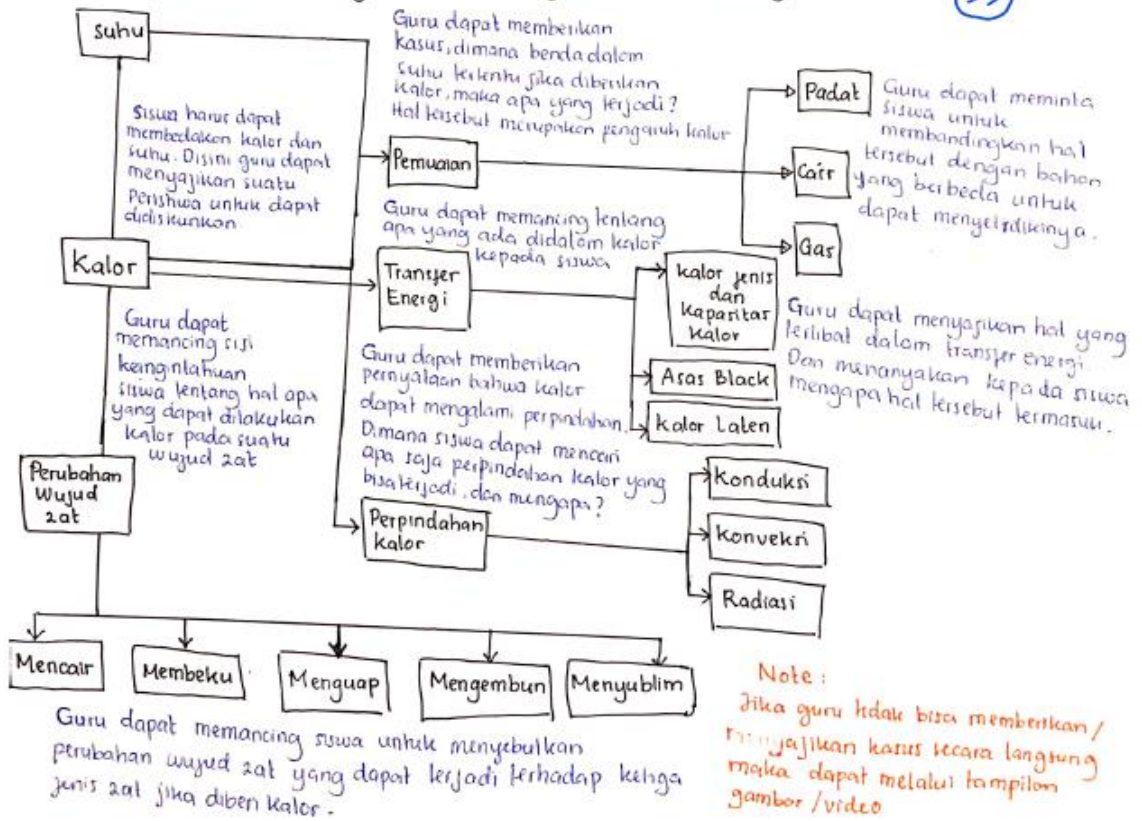
JUR/PRODI	PMIPA/Pendidikan Fisika		SKS: 3
Kode/Matakuliah	05035344 / Pembelajaran Fisika 2		
Dosen Pengampu	Nurul F. Sulaeman, Ph.D dan Shelly Eswinda, M.Pd		
Hari : Jumat	Tgl.: 4 Juni 2021	Mulai pukul: 09.00 s.d. 11.30	Ruang: MOLS
Nama: Sylvia Novariana		NIM: 1805035002	Kelas: A
Salinlah pernyataan berikut di kolom samping: *Saya tidak akan melakukan kecurangan dan melanggar tata tertib dalam ujian ini. Jika saya melakukan pelanggaran, maka saya bersedia diberi sanksi*	Saya tidak akan melakukan kecurangan dan melanggar tata tertib dalam ujian ini. Jika saya melakukan pelanggaran, maka saya bersedia diberi sanksi		Tanda Tangan Mahasiswa

90

1 KD : menganalisis pengaruh kalor dan perpindahan kalor yang meliputi karakteristik termal suatu bahan, kapasitas, dan konduktivitas kalor pada kehidupan sehari-hari

Alur penguasaan materi dengan memperhimbangkan scientific reasoning

35



Note :
Jika guru tidak bisa memberikan / menyajikan kasus secara langsung maka dapat melalui tampilan gambar / video

	FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN UNIVERSITAS MULAWARMAN		
	UJIAN AKHIR SEMESTER GENAP TA. 2020/2021		
JUR/PRODI	PMIPA/Pendidikan Fisika		SKS: 3
Kode/Matakuliah	05035344 / Pembelajaran Fisika 2		
Dosen Pengampu	Nurul F. Sulaeman, Ph. D dan Shelly Ejutnda, M.Pd		
Hari : Jumat	Tgl.: 4 Juni 2021	Mulai pukul: 9.00 s.d. 11.30	Ruang: MOLS
Nama: Sylvia Novariana		NIM: 1805035002	Kelas: A
Salinlah pernyataan berikut di kolom samping: *Saya tidak akan melakukan kecurangan dan melanggar tata tertib dalam ujian ini. Jika saya melakukan pelanggaran, maka saya bersedia diberi sanksi*	Saya tidak akan melakukan kecurangan dan melanggar tata tertib dalam ujian ini. Jika saya melakukan pelanggaran, maka saya bersedia diberi sanksi		Tanda Tangan Mahasiswa

2. Rancangan Program Semester
Tahun Ajaran : 2021/2022
Mata pelajaran : Fisika
kelas / semester : X / Ganjil
Alokasi Waktu : 1 JP = 45 Menit

30

Kompetensi Dasar	Materi	Alokasi Waktu	Model Pembelajaran	Alasan
3.1. Menerapkan hakikat Ilmu Fisika, metode ilmiah, dan keselamatan kerja di laboratorium serta peran fisika dalam kehidupan 4.1. Membuat prosedur kerja ilmiah dan keselamatan kerja misalnya pada pengukuran kalor	Hakikat fisika • hakikat fisika dan perlunya mempelajari fisika • Ruang lingkup fisika • Metode dan prosedur ilmiah • keselamatan kerja di laboratorium	3 JP (1 kali pertemuan)	Probing - prompting	Teknik probing-prompting adalah pembelajaran dengan cara guru menyajikan serangkaian pertanyaan yang sifatnya menuntun dan menggali sehingga terjadi proses berpikir yang mengaitkan pengetahuan sikap siswa dan pengalamannya dengan pengetahuan baru yang sedang dipelajari. Hal tersebut sangat cocok untuk dapat memahamkan kepada siswa bagaimana prosedur ilmiah berjalan.
3.2 . . . 4.2 . . .	Pengukuran • ketelitian (akurasi) dan ketepatan (presisi) • Penggunaan alat ukur • Kesalahan pengukuran • Penggunaan angka penting	9 JP (3 kali pertemuan)	Quantum Learning	Pembelajaran ini melibatkan siswanya secara langsung sehingga siswa bisa ikut mendemonstrasikan materi yang sedang dipraktikan
			Direct learning	Cara ini sering disebut dengan metode ceramah, karena hanya guru yang menyampaikan keterampilan dasar

	FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN UNIVERSITAS MULAWARMAN		
	UJIAN AKHIR SEMESTER GENAP TA. 2020/2021		
JUR/PRODI	PMIPA/Pendidikan Fisika		SKS: 3
Kode/Matakuliah	05035349 / Pembelajaran Fisika 2		
Dosen Pengampu	Murul F. Sulaeman, Ph.D dan Shelly Eswinda, M.Pd		
Hari : Jumat	Tgl.: 4 Juni 2021	Mulai pukul: 900 s.d. 11:30	Ruang: M 021
Nama: Sylvia Novriore		NIM: 1805035002	Kelas: A
Salinlah pernyataan berikut di kolom samping: *Saya tidak akan melakukan kecurangan dan melanggar tata tertib dalam ujian ini. Jika saya melakukan pelanggaran, maka saya bersedia diberi sanksi*	Saya tidak akan melakukan kecurangan dan melanggar tata tertib dalam ujian ini. Jika saya melakukan pelanggaran, maka saya bersedia diberi sanksi		Tanda Tangan Mahasiswa

Materi	Model Pembelajaran	Alasan
Vektor : - Penjumlahan vektor - Perpindahan vektor - kecepatan vektor - percepatan vektor - Gaya sebagai vektor	RME (Realistic Matematics Education)	karena prinsip RME adalah aktivitas (doing) konstruktivis. sehingga siswa dapat memahami konsep vektor yang ada di dunia nyata.
Gerak lurus : - Gerak lurus dengan kecepatan konstan (tetap) - Gerak lurus dengan percepatan konstan (tetap)	PBL (Problem Based Learning)	Model ini dirasa tepat untuk materi gerak lurus karena di materi ini banyak sekali permasalahan dikehidupan sehari-hari yang berkaitan.
Gerak Parabola : - gerak parabola - pemanfaatan gerak parabola dalam kehidupan sehari-hari	Problem solving	karena materi ini berkaitan dengan pemanfaat dalam kehidupan sehari-hari, partinya dipelajari untuk memecahkan permasalahan yang berkaitan dengannya. sehingga akan tepat jika menggunakan problem solving
Gerak melingkar : - gerak melingkar dengan laju konstan (tetap) - frekuensi dan periode - kecepatan sudut - kecepatan linier - gaya sentripetal	Direct Learning	Model ini sering disebut dengan model ceramah, karena guru hanya akan menyampaikan keterampilan dasar (basis) pada materi ini.

	FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN UNIVERSITAS MULAWARMAN		
	UJIAN AKHIR SEMESTER GENAP TA. 2020/2021		
JUR/PRODI	PMIPA/Pendidikan Fisika		SKS: 3
Kode/Matakuliah	05035844 / Pemb Fis 2		
Dosen Pengampu	Nurul F. Sulaeman, Ph. D dan Sudy Ertmi		
Hari : Jumat	Tgl.: 4 Juni 2021	Mulai pukul: 9.00 s.d. 11.30	Ruang: M013
Nama: Sylvia Novariana		NIM: 1805035002	Kelas: A
Salinlah pernyataan berikut di kolom samping: *Saya tidak akan melakukan kecurangan dan melanggar tata tertib dalam ujian ini. Jika saya melakukan pelanggaran, maka saya bersedia diberi sanksi*	Saya tidak akan melakukan kecurangan dan melanggar tata tertib dalam ujian ini. Jika saya melakukan pelanggaran, maka saya bersedia diberi sanksi.		Tanda Tangan Mahasiswa

3 Kompetensi Dasar

3.6. Memahami teori kinetik gas dan karakteristik gas pada ruang tertutup

4.6. Mempresentasikan laporan hasil pemikiran tentang teori kinetik gas, dan makna fisisnya.

Pertemuan 45 menit (pertama)

IPK

25

3.6.1. Menentukan sifat gas ideal (C2 - konseptual)

3.6.2. Memahami hubungan tekanan, suhu, dan volume pada gas (C2 - konseptual)

3.6.3. Mengidentifikasi persamaan hukum boyle beserta makna fisisnya (C2 - konseptual)

Kegiatan	Langkah Pembelajaran	Deskripsi Kegiatan		Alokasi Waktu
		Kegiatan		
Pendahuluan	Motivasi			
	Pembukaan	- Guru mengucapkan salam dan mengecek kehadiran peserta didik - Guru memperilahkan untuk berdoa terlebih dahulu - Guru mengkondisikan peserta didik dalam beberapa kelompok	- peserta didik menjawab salam dengan kompak - ketua kelas memimpin doa bersama - Peserta didik duduk sesuai dengan kelompok yang sudah dibagikan.	2 menit
	Apersepsi			
	Stimulasi	- Guru mereview sekilas materi di KD sebelumnya dan menghubungkannya dengan KD ini - Guru menampilkan simulator phet tentang gas ideal. kemudian menyebutkan poksk perbedaan antara gas ideal dan gas nyata - Guru menyampaikan 3 faktor yang berkaitan dengan hukum dr gas ideal.	- Peserta didik dengan aktif menanggapi pembahasan tentang materi sebelumnya. - Peserta didik menunjukan sisi kritisnya dengan menanggapi simulator yang didemonstrasikan oleh guru.	10 menit

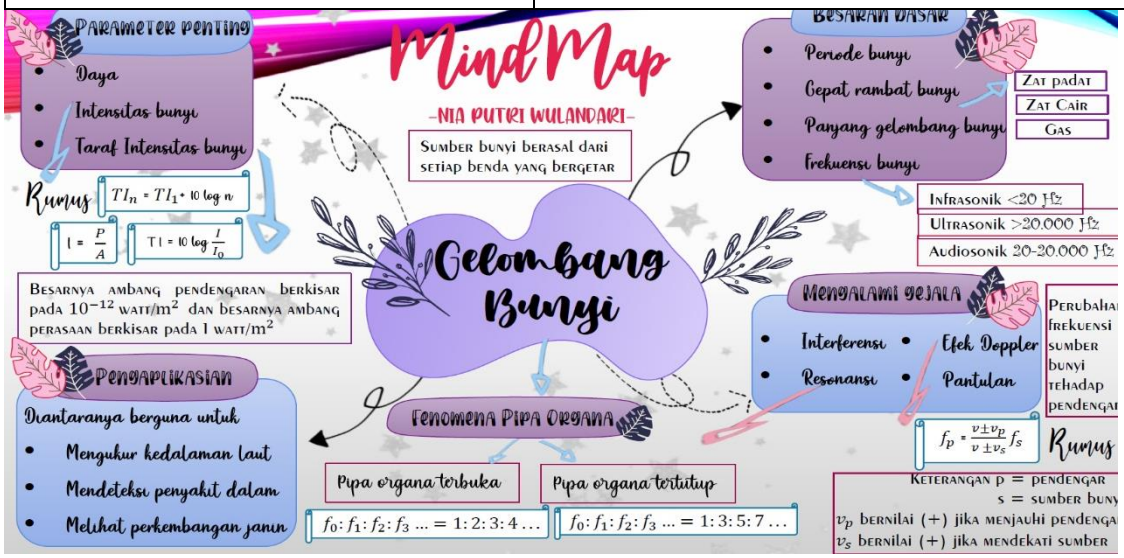
	FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN UNIVERSITAS MULAWARMAN		
	UJIAN AKHIR SEMESTER GENAP TA. 2020/2021		
JUR/PRODI	PMIPA/Pendidikan Fisika		SKS: 3
Kode/Matakuliah	0503.344 / Pemb Fis 2		
Dosen Pengampu	Nurd F. Sulaeman, Ph.D dan Shelly Efendi, M.Pd		
Hari : Jumat	Tgl.: 4 Juni 2021	Mulai pukul: 9.40 s.d. 11.20	Ruang: MGLS
Nama: Sylvia Novem		NIM: 1805075002	Kelas: A
Salinlah pernyataan berikut di kolom samping: *Saya tidak akan melakukan kecurangan dan melanggar tata tertib dalam ujian ini. Jika saya melakukan pelanggaran, maka saya bersedia diberi sanksi*	Saya tak akan melakukan kecurangan dan mengerjakan tepat waktu dan ujian ini. Jika saya melakukan pelanggaran maka saya bersedia diberi sanksi		Tanda Tangan Mahasiswa

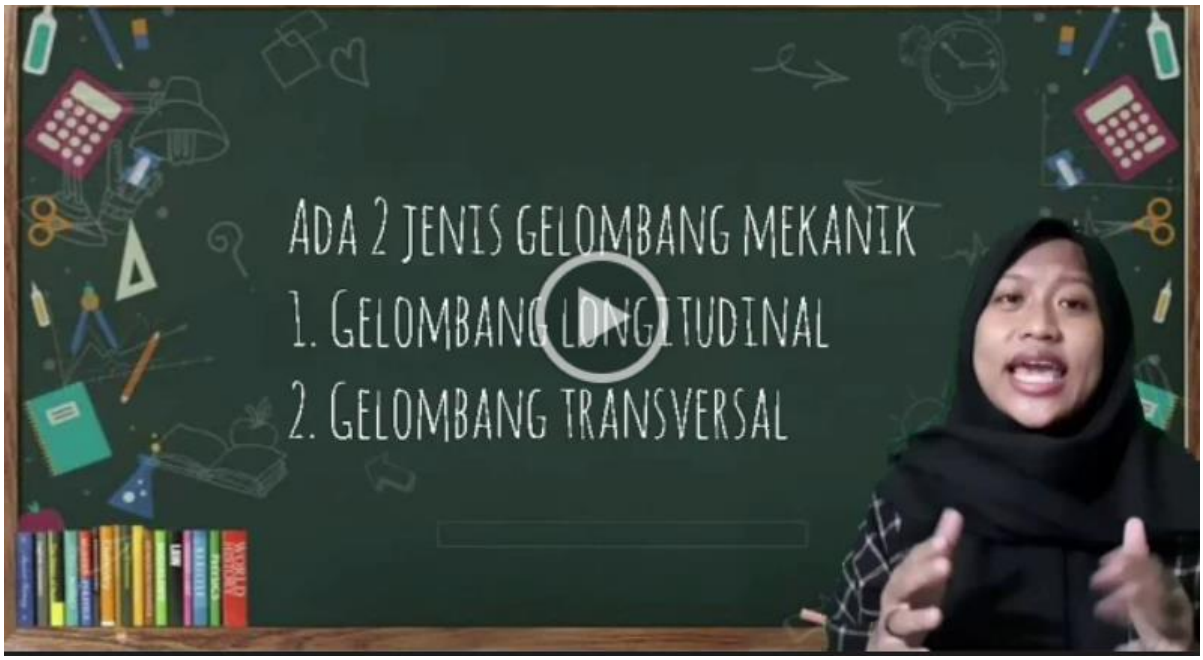
Inti	Mengidentifikasi Maralah	Mengamati dan Menanya		5 menit
		- Guru memberikan satu contoh kasus yang berhubungan dengan hukum Boyle - Guru meminta peserta didik untuk mengambil alat yang disebutkan oleh guru	- Peserta didik ikut mengidentifikasi letak hukum Boyle pada contoh yang dipaparkan oleh guru - Peserta didik melakukan hal yang diarahkan guru	
	Pengumpulan Data	Mencoba		11 menit
		- Guru mengarahkan peserta didik untuk mengisi LKPD yang sudah diberikan	- Peserta didik memahami isi LKPD yang diberikan (cambi data)	
	Pengolahan Data	Mengasosiasi		
		- Guru meminta peserta didik untuk menganalisis data yang telah mereka dapatkan	- Peserta didik menganalisis data dan mendiskusikan kesimpulan masing-masing kelompok	
Penutup	Pembuktian	Mengkomunikasikan dan Tindak Lanjut		17 menit
		- Guru meminta perwakilan kelompok untuk menyampaikan hasil diskusi mereka	- Perwakilan kelompok maju untuk menjelaskan hasil yang didapat	
	Genetalisasi	Reinforcement		
		- Guru memberi pemahaman kepada peserta didik tentang kesimpulan yang didapat.	- Peserta didik memperhatikan penjelasan guru dan bertanya jika kurang mengerti	

Evaluasi ?

D.2.3 STUDENT'S ASSIGNMENT EXAMPLE

CPMK 1: Apply content knowledge in planning Physics learning at high school level	Task 1 Create a mind map of high school physics learning materials based on the 2013 Curriculum and make a learning video where you deliver one of the materials with lecture methods.





CLO 2: Apply pedagogical knowledge in planning Physics learning at high school level	Task 2 In teaching, a teacher needs to determine what approach, model and method is appropriate to use. If you are a high school physics teacher, choose one of the materials in the 2013 curriculum and then determine how you will teach the material? Explain using scientific reasons.

CLO 3: Applying technological knowledge in planning Physics learning at the high school level	Task 3 As a continuation of task 2, what do you think about the need to integrate technology into the learning of physics for the material? Make some examples of cognitive problems from the material by utilizing one of the online platforms such as google form, quiz etc. Include a link to access the example of this problem!

Nama : Amelia Utami
NIM : 1805035016
Kelas : Fisika Reguler A 2018
Mata Kuliah : Pembelajaran Fisika 2
Dosen : Shelly Efwinda, S.Pd, M.Pd

Materi yang digunakan :

KD 3.11 Menganalisis keterbatasan sumber energi dan dampaknya bagi kehidupan

Sumber-sumber Energi:

- Sumber energi terbarukan dan tak terbarukan
- Pembangkit energi listrik terbarukan dan tak terbarukan
- Energi alternatif

Pendekatan dan model pembelajaran yang digunakan :

Pendekatan *Saintifik* dengan model pembelajaran *Blended Learning*

Blended learning digunakan karena memudahkan pembelajaran yang menggabungkan berbagai cara penyampaian, gaya pembelajaran, hingga pilihan media. Model pembelajaran ini sangat fleksibel untuk digunakan dalam berbagai kondisi. Saya ingin menggunakan *Flipped Classroom* yang hakikatnya merupakan salah satu metode penerapan blended learning itu sendiri. Disini siswa akan dibagi dalam beberapa kelompok besar untuk mendiskusikan materi yang dibagikan, kemudian siswa mendiskusikan materi dan mempersiapkan diri untuk menyapaikan materi dikelas (daring/luring). Dalam persiapan kelompok guru tetap membimbing siswa dengan bantuan media komunikasi yang tersedia (seperti WA/LMS). Terakhir kelompok siswa bergantian mengadakan diskusi dikelas mengenai materi yang telah dibagikan serta guru memberi penguatan atas materi tersebut.

Pada materi sumber-sumber energi siswa dapat dengan menemukan berbagai informasi dari berbagai sumber. Materi ini merupakan materi yang lekat dengan kehidupan sehari-hari. Jadi saya rasa siswa dapat berdiskusi dengan baik, dan model pembelajaran ini cocok untuk digunakan dalam materi ini.

Contoh soal kognitif dari materi

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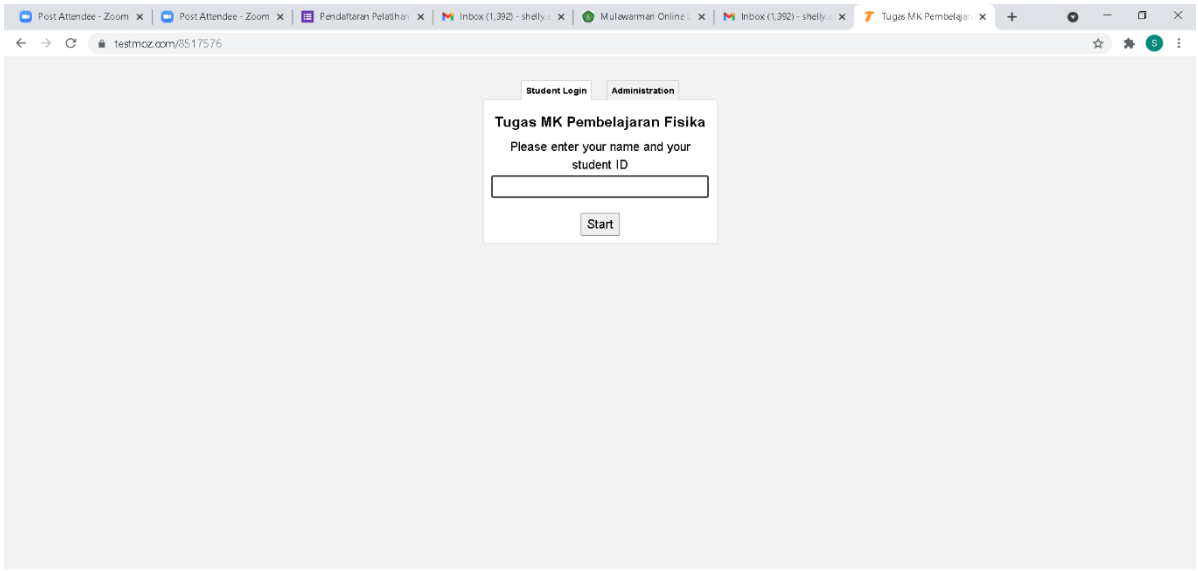


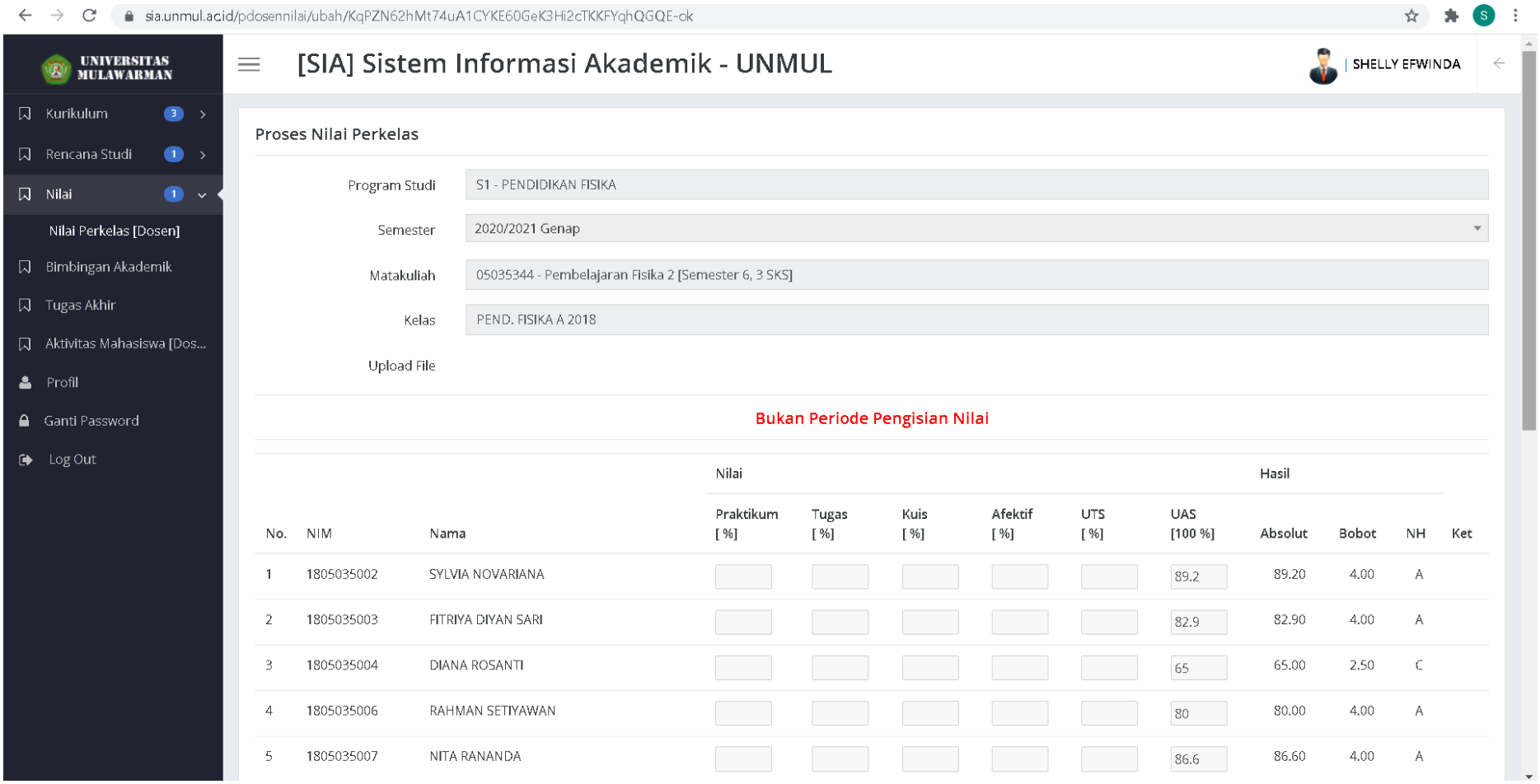
D.3 ASSESSMENT SUMMARY

D.3.1 ITEM ANALYSIS

The final exam question of the semester consists of two questions in the form of essay questions that are analyzed through experts in the field of Physical Education. Essay questions are analyzed with expert assessment in the course team members. The analysis is carried out by taking into account several aspects, namely the suitability of the problem with PLO and CLO to be achieved and the suitability of the use of language, content, and construct.

D.3.2 EVALUATION MODEL EXAMPLE
2018 Regular A Class

No.	NIM	Name	Presence	Assignment	UTS	UAS	Final Value
			10%	20%	30%	40%	
1	1805035002	SYLVIA NOVARIANA	10	18	25,2	36	89,2
2	1805035003	FITRIYA DIYAN SARI	10	18,5	26,4	28	82,9
3	1805035004	DIANA ROSANTI	9,375	16	17,4	22	65
4	1805035006	RAHMAN SETIYAWAN	10	17	26,1	26	80
5	1805035007	NITA RANANDA	10	17,5	23,1	36	86,6
6	1805035008	HAIRUN NISA	10	16,5	22,2	26	75
7	1805035010	MELI YUNIAR FITRIYANTI	10	18	25,2	26	80
8	1805035011	MUHAMMAD ZULKIFLI OKTA ANANDA	10	16,5	20,7	22	70
9	1805035012	RHEIMA AFFILIA	10	17,5	21	28	76,5
10	1805035013	SEPTYANI QUARTER OF	10	15	19,2	24	70
11	1805035014	RISKI AMALIA	10	18,5	22,2	32	82,7
12	1805035016	AMELIA UTAMI	10	16	25,2	26	77,2
13	1805035017	JULIA PRINCESS MAHARANI	10	15,5	26,4	16	68
14	1805035018	MUHAMMAD SYARIF HIDAYATULLAH	10	16	24,6	14	65
15	1805035019	SHAFIRA AULIA PUTRI	10	17	23,1	24	75
16	1805035020	LOLA JOVITA	10	16,5	21,3	22	70
17	1805035021	PRINCESS ALAYDA ROHALI	10	16,5	24,6	18	70
18	1805035022	FANZURUNI FAUHATUN MABRURAH	10	18,5	25,8	24	80
19	1805035023	VERNANDA ADI SAPUTRA	10	13	22,8	24	70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SHELLY EFWINDA
Kurikulum 3
Rencana Studi 1
Nilai 1
Nilai Perkelas [Dosen]
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Program Studi S1 - PENDIDIKAN FISIKA
Semester 2020/2021 Genap
Matakuliah 05035344 - Pembelajaran Fisika 2 [Semester 6, 3 SKS]
Kelas PEND. FISIKA A 2018
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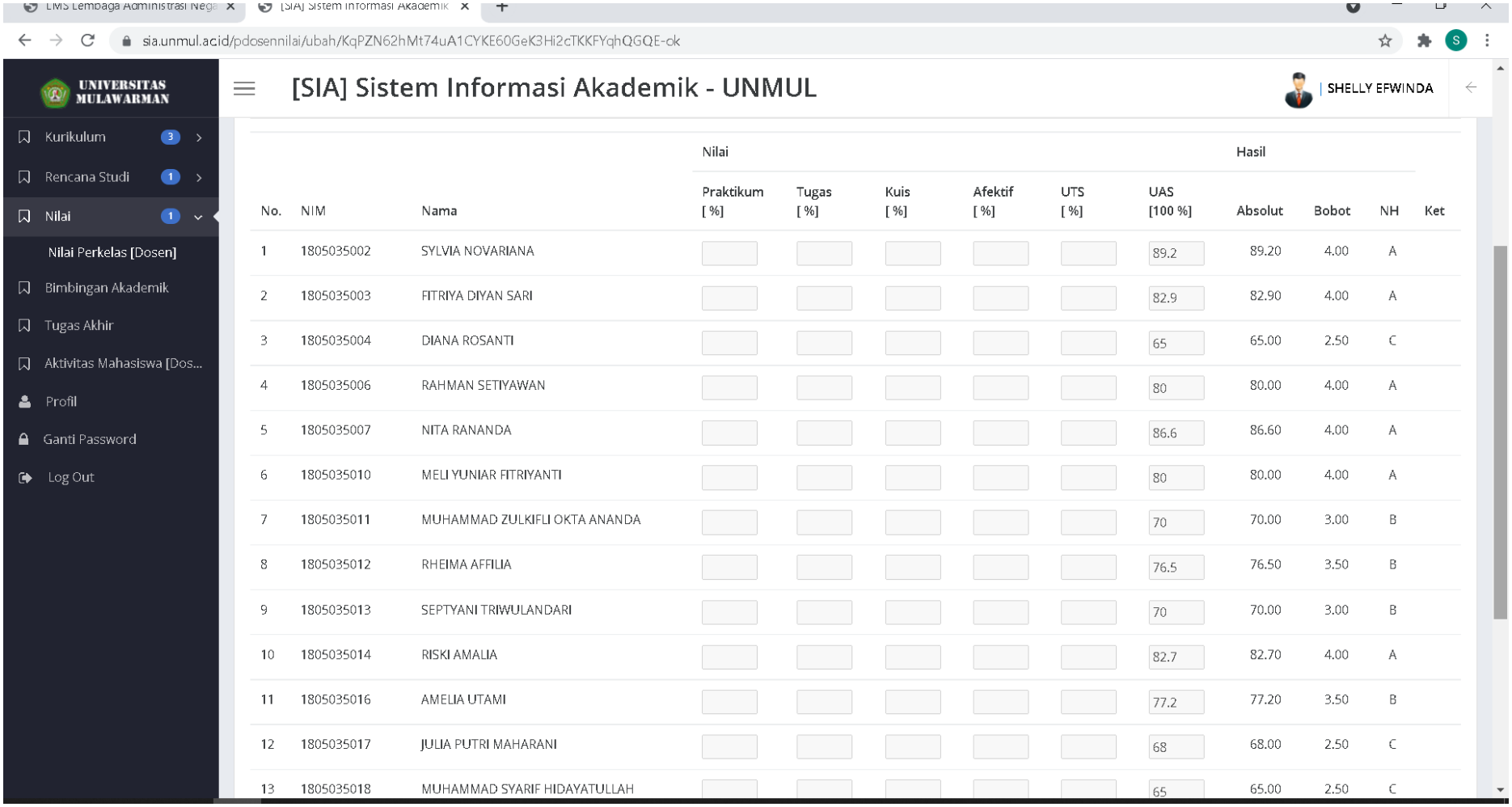
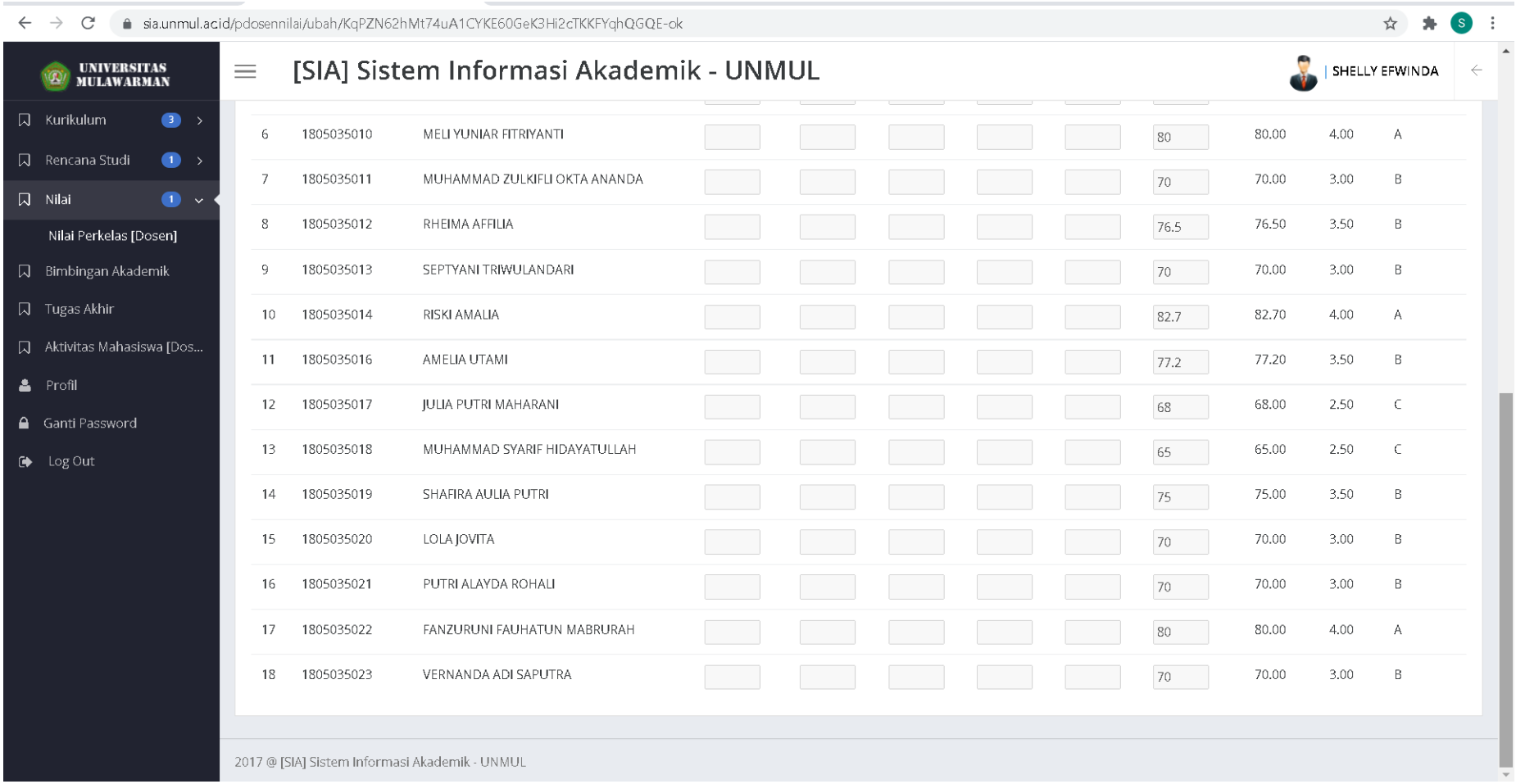
1 1805035002 SYLVIA NOVARIANA 89.2 89.20 4.00 A
2 1805035003 FITRIYA DIYAN SARI 82.9 82.90 4.00 A
3 1805035004 DIANA ROSANTI 65 65.00 2.50 C
4 1805035006 RAHMAN SETIYAWAN 80 80.00 4.00 A
5 1805035007 NITA RANANDA 86.6 86.60 4.00 A



			Nilai						Hasil			
No.	NIM	Nama	Praktikum [%]	Tugas [%]	Kuis [%]	Afektif [%]	UTS [%]	UAS [100 %]	Absolut	Bobot	NH	Ket
1	1805035002	SYLVIA NOVARIANA						89.2	89.20	4.00	A	
2	1805035003	FITRIYA DIYAN SARI						82.9	82.90	4.00	A	
3	1805035004	DIANA ROSANTI						65	65.00	2.50	C	
4	1805035006	RAHMAN SETIYAWAN						80	80.00	4.00	A	
5	1805035007	NITA RANANDA						86.6	86.60	4.00	A	
6	1805035010	MELI YUNIAR FITRIYANTI						80	80.00	4.00	A	
7	1805035011	MUHAMMAD ZULKIFLI OKTA ANANDA						70	70.00	3.00	B	
8	1805035012	RHEIMA AFFILIA						76.5	76.50	3.50	B	
9	1805035013	SEPTYANI TRIWULANDARI						70	70.00	3.00	B	
10	1805035014	RISKI AMALIA						82.7	82.70	4.00	A	
11	1805035016	AMELIA UTAMI						77.2	77.20	3.50	B	
12	1805035017	JULIA PUTRI MAHARANI						68	68.00	2.50	C	
13	1805035018	MUHAMMAD SYARIF HIDAYATULLAH						65	65.00	2.50	C	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6 1805035010 MELI YUNIAR FITRIYANTI 80 80.00 4.00 A
7 1805035011 MUHAMMAD ZULKIFLI OKTA ANANDA 70 70.00 3.00 B
8 1805035012 RHEIMA AFFILIA 76.5 76.50 3.50 B
9 1805035013 SEPTYANI TRIWULANDARI 70 70.00 3.00 B
10 1805035014 RISKI AMALIA 82.7 82.70 4.00 A
11 1805035016 AMELIA UTAMI 77.2 77.20 3.50 B
12 1805035017 JULIA PUTRI MAHARANI 68 68.00 2.50 C
13 1805035018 MUHAMMAD SYARIF HIDAYATULLAH 65 65.00 2.50 C
14 1805035019 SHAFIRA AULIA PUTRI 75 75.00 3.50 B
15 1805035020 LOLA JOVITA 70 70.00 3.00 B
16 1805035021 PUTRI ALAYDA ROHALI 70 70.00 3.00 B
17 1805035022 FANZURUNI FAUHATUN MABRURAH 80 80.00 4.00 A
18 1805035023 VERNANDA ADI SAPUTRA 70 70.00 3.00 B
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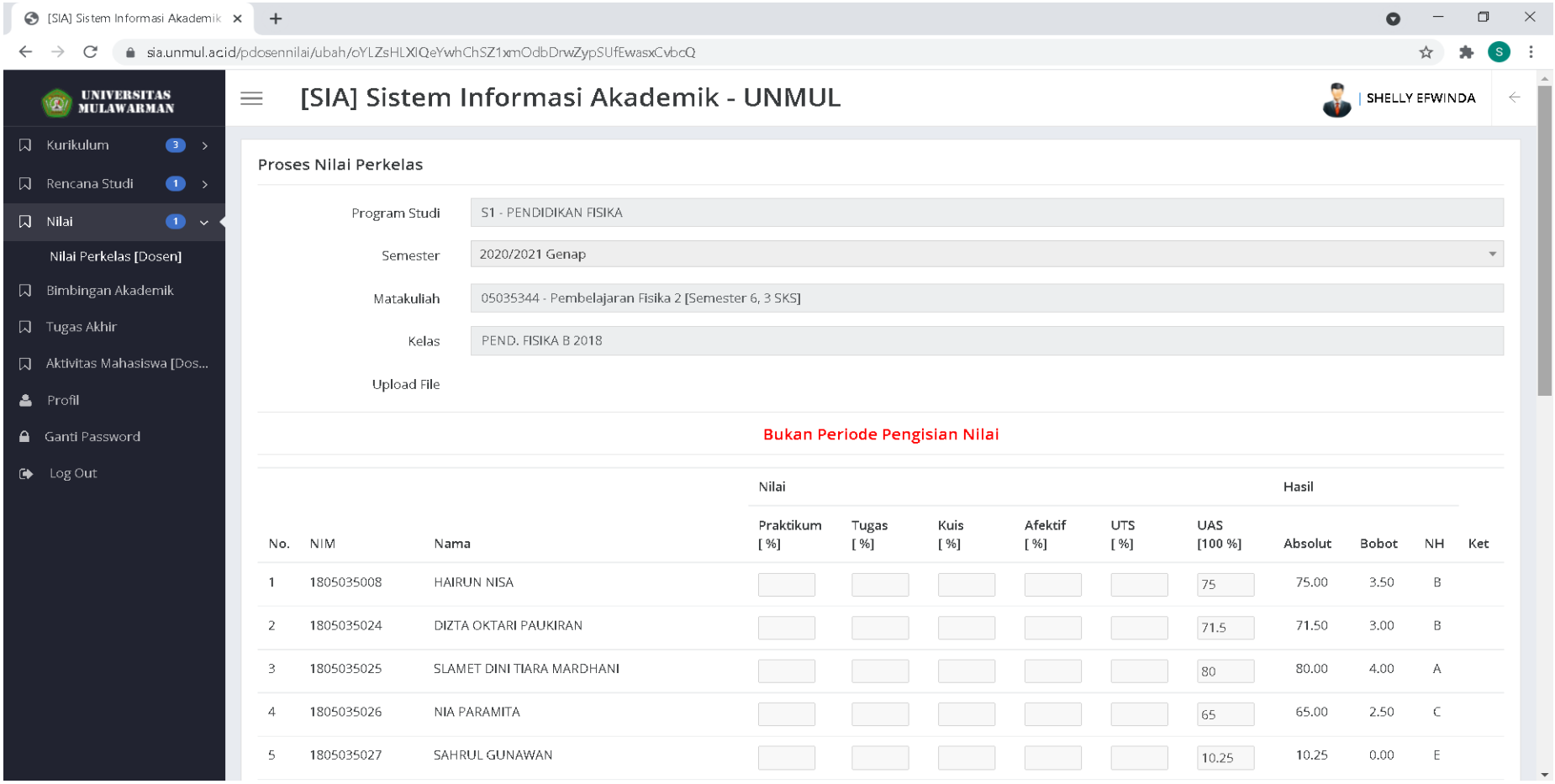
2018 Regular B Class

No.	NIM	NAME	Presence 10%	Assignment 20%	UTS 30%	UAS 40%	Final Value
1	1805035024	DIZTA OKTARI PAUKIRAN	10	16,5	21	24	71,5
2	1805035025	SLAMET DINI TIARA M.	10	18,3	23,7	28	80
3	1805035026	NIA PARAMITA	10	18	21	16	65
4	1805035027	SAHRUL GUNAWAN	8,75	0	1,5	0	10,25
5	1805035028	LUSIANAWATI	10	16,5	26,1	30	82,6
6	1805035029	AYU AVIRA KASTIAWATI	10	19	26,1	28	83,1
7	1805035030	HENDRIK PAJRIANSYAH	5,625	0	0	0	5,625
8	1805035031	OCTAVIANI MUTMAINAH	10	19	24	34	87
9	1805035032	DHEA AMANDA'S DAUGHTER	9,375	18	18,625	24	70
10	1805035033	ZAKIYATUZZAHRA	10	17	21,3	22	70,3
11	1805035034	ROSYTHA TRI ANGGRAYNIE	10	18	21	18	67
12	1805035035	SONIA AYU RIANI	10	16	23,1	26	75,1
13	1805035036	RORO DINDA ALTHAF F.Z.A	10	16,5	19,5	30	76
14	1805035037	FEBRY AZHARI	9,375	18	18,625	24	70
15	1805035038	SULATRI ISMAIL	9,375	18	20	12,625	60
16	1805035039	NIA PUTRI WULANDARI	9,375	17	24,625	34	85
17	1805035040	SUHATRI ISMAIL	9,375	18	20	12,625	60
18	1805035041	ELMA LEASES LANGI'	10	12,9	17,1	20	60
19	1805035042	DEVI SIANTURI	10	16	22,8	24	72,8
20	1805035043	FAISAL RAMADHANI	10	16,5	19,5	24	70
21	1805035044	MARIA CELVI ADVENIA MONE	10	13,9	20,1	26	70
22	1805035047	RACHEL NOVENTRIANI	10	4,4	24,6	24	63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2020/2021 Genap
Matakuliah
05035344 - Pembelajaran Fisika 2 [Semester 6, 3 SKS]
Kelas
PEND. FISIKA B 2018
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2 1805035024 DIZTA OKTARI PAUKIRAN 71.5 71.50 3.00 B
3 1805035025 SLAMET DINI TIARA MARDHANI 80 80.00 4.00 A
4 1805035026 NIA PARAMITA 65 65.00 2.50 C
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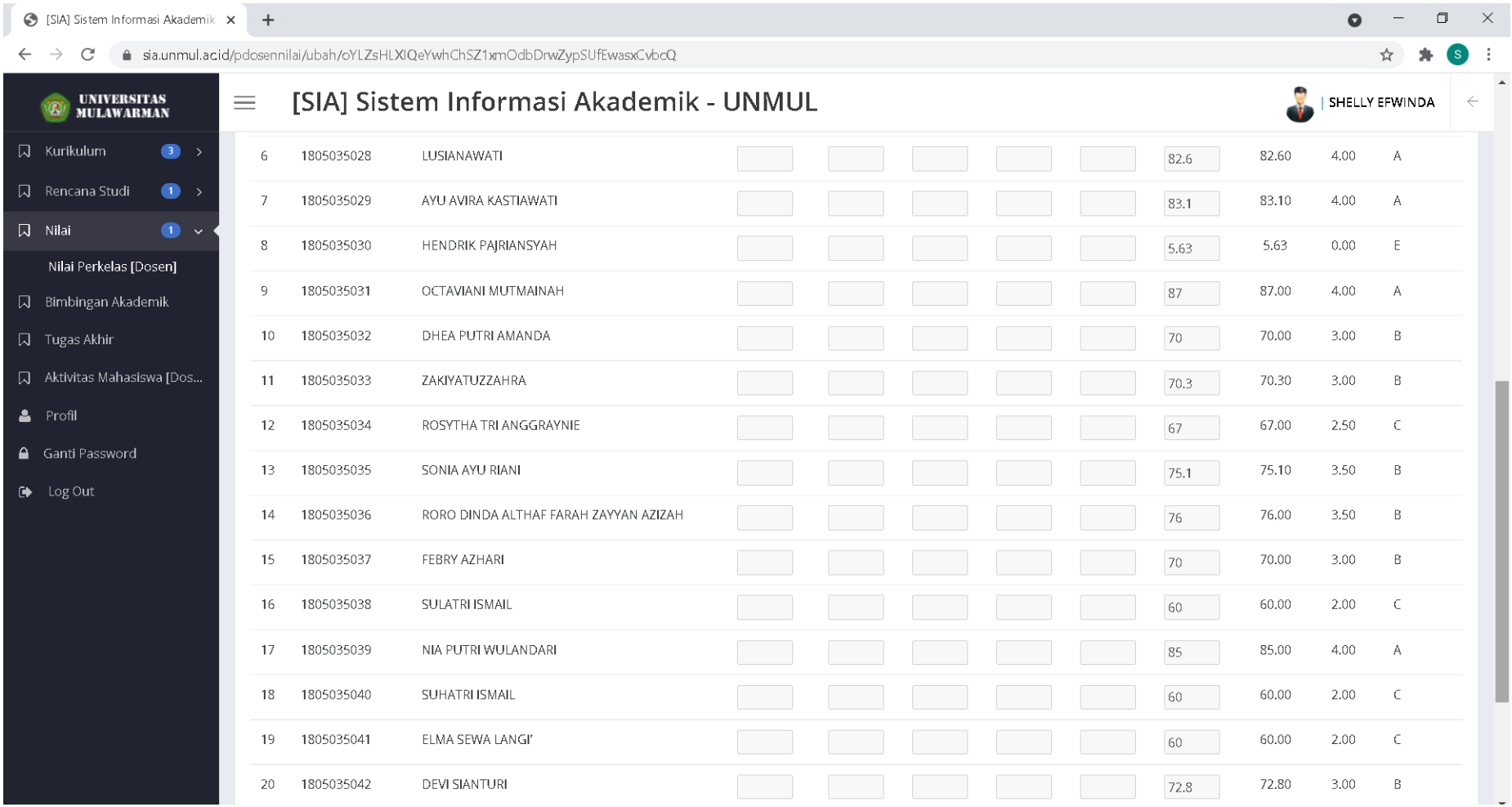
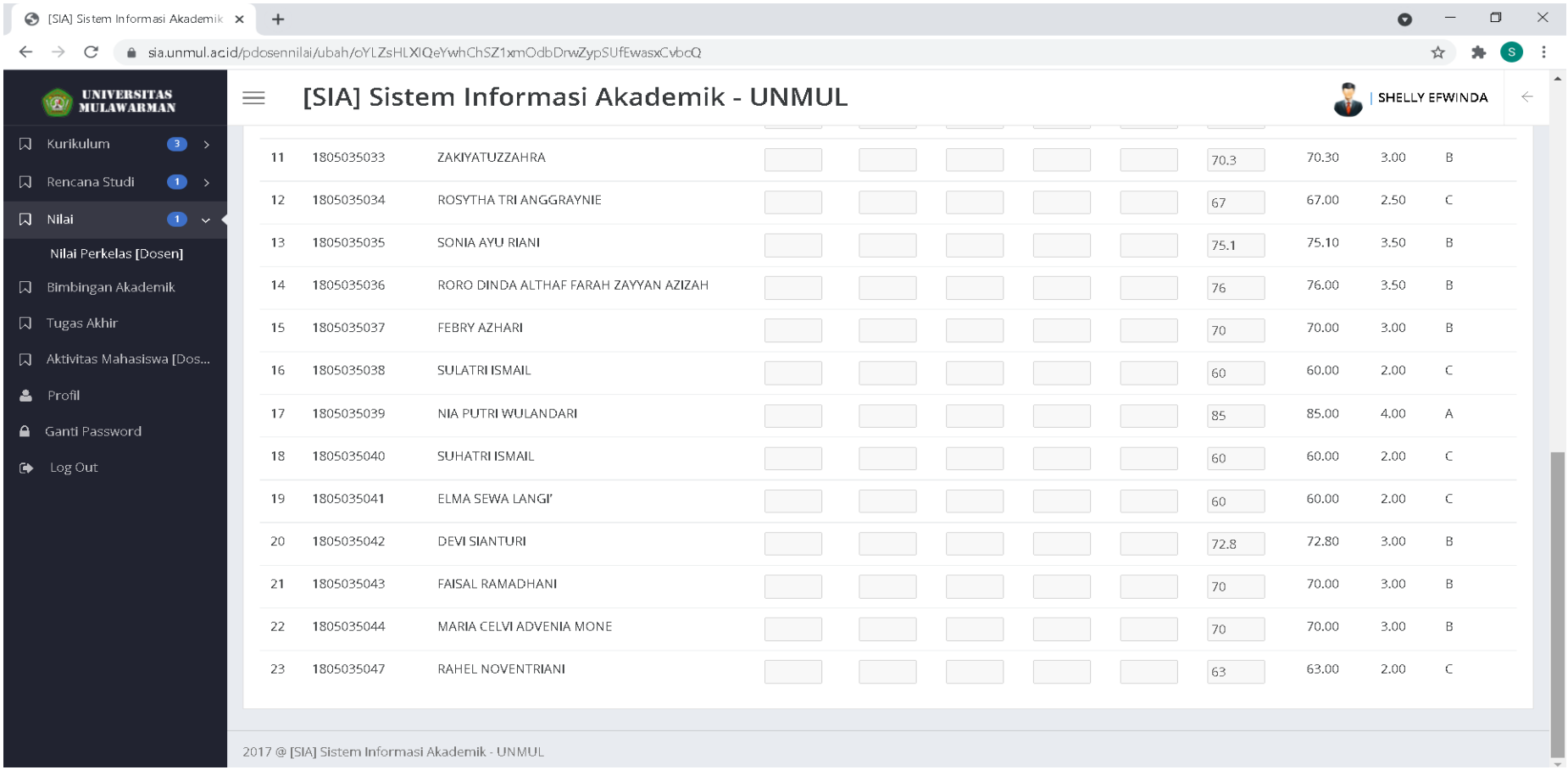


6	1805035028	LUSIANAWATI						82.6	82.60	4.00	A
7	1805035029	AYU AVIRA KASTIAWATI						83.1	83.10	4.00	A
8	1805035030	HENDRIK PAJRIANSYAH						5.63	5.63	0.00	E
9	1805035031	OCTAVIANI MUTMAINAH						87	87.00	4.00	A
10	1805035032	DHEA PUTRI AMANDA						70	70.00	3.00	B
11	1805035033	ZAKIYATUZZAHRA						70.3	70.30	3.00	B
12	1805035034	ROSYTHA TRI ANGGRAYNIE						67	67.00	2.50	C
13	1805035035	SONIA AYU RIANI						75.1	75.10	3.50	B
14	1805035036	RORO DINDA ALTHAF FARAH ZAYYAN AZIZAH						76	76.00	3.50	B
15	1805035037	FEBRY AZHARI						70	70.00	3.00	B
16	1805035038	SULATRI ISMAIL						60	60.00	2.00	C
17	1805035039	NIA PUTRI WULANDARI						85	85.00	4.00	A
18	1805035040	SUHATRI ISMAIL						60	60.00	2.00	C
19	1805035041	ELMA SEWA LANGI'						60	60.00	2.00	C
20	1805035042	DEVI SIANTURI						72.8	72.80	3.00	B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Nilai Perkelas [Dosen]
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12 1805035034 ROSYTHA TRI ANGGRAYNIE 67 67.00 2.50 C
13 1805035035 SONIA AYU RIANI 75.1 75.10 3.50 B
14 1805035036 RORO DINDA ALTHAF FARAH ZAYYAN AZIZAH 76 76.00 3.50 B
15 1805035037 FEBRY AZHARI 70 70.00 3.00 B
16 1805035038 SULATRI ISMAIL 60 60.00 2.00 C
17 1805035039 NIA PUTRI WULANDARI 85 85.00 4.00 A
18 1805035040 SUHATRI ISMAIL 60 60.00 2.00 C
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20 1805035042 DEVI SIANTURI 72.8 72.80 3.00 B
21 1805035043 FAISAL RAMADHANI 70 70.00 3.00 B
22 1805035044 MARIA CELVI ADVENIA MONE 70 70.00 3.00 B
23 1805035047 RAHEL NOVENTRIANI 63 63.00 2.00 C
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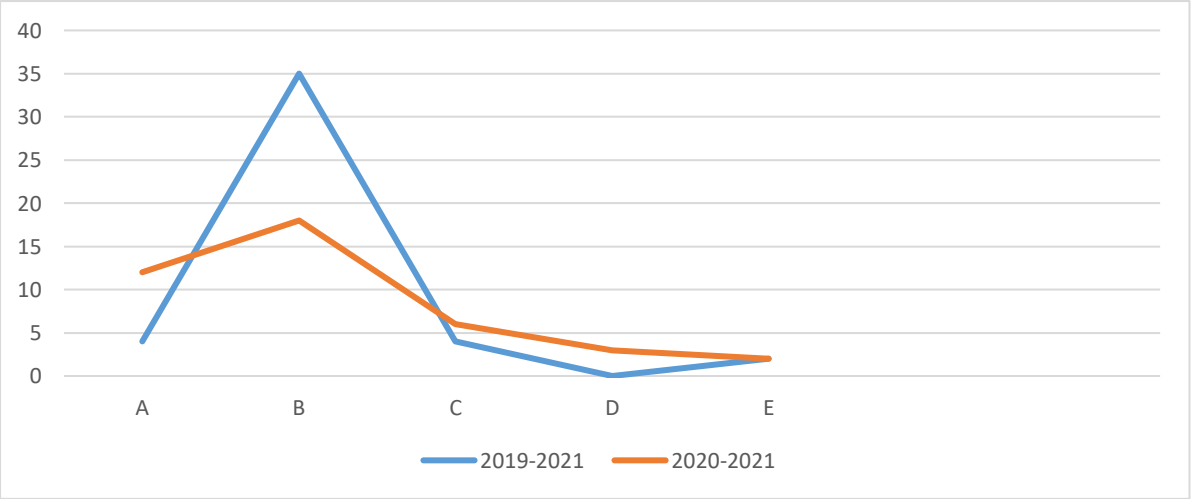
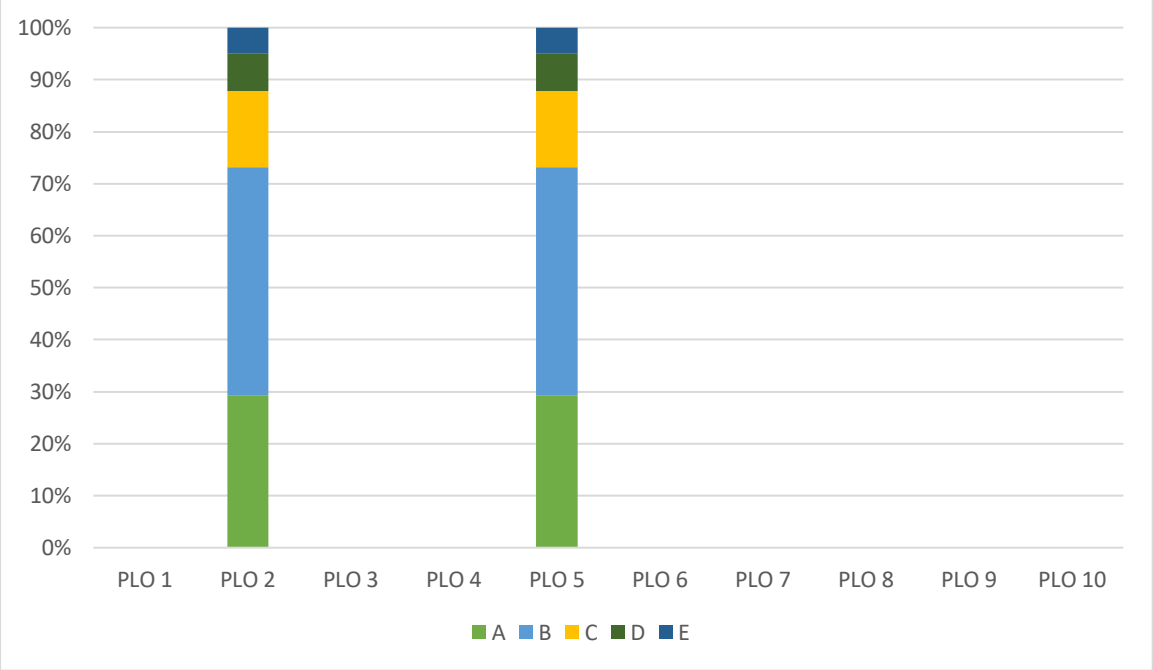
D.3.3 THE ACADEMIC YEAR 2020/2021 OUTCOME

Parameter	Student Amount	Percentage
The number of students taking the course	41 students	100%
The number of students passing the course (>E)	39 students	95,12%
The number of students needed to retake the exam	2	4,88%
The number of students who failed after retaking the exam	2	4,88%

Comparison to Last Year Graphic



Graph of Learning Outcomes related to PLO 2 and PLO 5



D.3.4 PROBLEM ANALYSIS/SOLVING

The graph on D. 3.3 illustrates the difference in the value of results in the 2 academic year Physics Learning courses 2019/2020 with the academic year 2020/2021. There is a difference in the achievement of the value of the course in the two school years. The average value of student learning outcomes in the Physics Learning Course 2 in the Academic year 2019/2020 is 68.98 and has increased in the academic year 2020/2021 with an average learning outcome of 75.43. Although experiencing an increase, these results need to be improved again to be more optimal because some students still exist who get the category of grades C, D, even grade E. Students who get E grades are declared not to graduate in this course, and number 2 people. Lecturers who have tried to communicate with the student to provide remedial opportunities, but because of the many obstacles experienced by the student following the lecture remotely, the opportunity is not used by the student concerned.

This shows that there are still some students who have difficulty in mastering learning achievements that are expected to be achieved in this course. So, in the next Academic Year, we plan to:

a. Interview students who are still in the category enough and under that category to find out what obstacles are experienced in physics learning courses 2.
b. Make interview answers as a consideration in designing learning strategies that will be used in physics learning courses 2
c. Design learning by paying attention to the student's initial abilities, student characteristics, etc.
d. If needed, redesign the lecture material (PPT slides, course content, etc.), to make it more contextual so that it is easier for students to understand.
e. Add meetings that can facilitate students to study actively so that students can build their own knowledge and learn more meaningfully
f. Provide more opportunities for students who wish to study this material outside of lesson hours