



# PLO ASSESMENT REPORT



**PHYSIC EDUCATION STUDY PROGRAM  
FACULTY OF TEACHER TRAINING AND EDUCATION  
MULAWARMAN UNIVERSITY**

## **Preface**

Praise and gratitude to God Almighty for His will and grace, the Program Learning Outcomes (PLO) Assessment Report for the Academic Year 2021/2022 in the Physics Education Study Program can be completed. The purpose of preparing this report book is to realize the commitment to improving continuous learning quality.

The Physics Education Study Program has 10 PLO consisting of knowledge, general skills, and special skills. The PLO assessment process in this report is carried out in lectures during the 2020/2021 Academic Year. All courses programmed by students in the 2021/2022 Academic Year were further analyzed to produce this report. Through this report, it is hoped that it will become an evaluation material for related parties in achieving the goals and profiles of the expected graduates of the study program. This report book contains the achievements of each Graduate Learning Outcome in the Physics Education Study Program.

We want to thank all those involved in the preparation of this report. Hopefully, this report book can be a means to improve the quality of lecture services for physics education students. We are fully aware that some courses still need to be evaluated and enhanced learning approaches and models to improve student performance in the next academic year. Therefore, we hope that this brief report can trigger all components, both within the Physics Education Study Program and stakeholders, together in improving quality sustainably and focusing on achieving the Educational Goals of the Physics Education Study Program that has been set.

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## A. Overview

Physics Education Study Program, Department of Mathematics and Natural Sciences Education (MIPA), Faculty of Teacher Training and Education at Mulawarman University (FKIP UNMUL), has implemented the Results-Based Education Curriculum (OBE). The Physics Education Study Program conducts an assessment of Graduate Learning Outcomes (PLO) for the 2020/2021 Academic Year. This process involves the Quality Assurance Unit, all lecturers and academic staff in the Physics Education Study Program. This report reflects the current PLO Achievements of the Physics Education Study Program as a result of the implementation of the OBE Curriculum.

PLO in the Physics Education Study Program is formulated to realize graduates' expected goals and profile, namely being able to enter the professional field according to expertise in the field of physics education. Therefore, it is essential to conduct an assessment of the achievement of PLO. The achievement of PLO can be analyzed through the successes of all programmed courses that are by the existing PLOs.

PLO assessment procedures, namely:

1. Performance indicators for each CLO and PLO are linked to the Assessment Components (Task, UTS, and UTS). Assessment components depend on the type of workload of the courses/modules according to the National Higher Education Standards;
2. Percentage of the weight of each component against CLO and PLO specified in the Courses and Curriculum;
3. The percentage of weight calculated based on the contribution of each Assessment Component for each CLO and PLO charged to the course. Weight formula: % Contribution x % performance indicators for each component of the assessment; and
4. Interpretation of student performance indicators in each PLO is divided into five categories of Letter Grades, namely:

Score	Grade
$80 \leq \text{Score} \leq 100$	A
$75 \leq \text{Score} < 80$	B
$70 \leq \text{Score} < 75$	
$65 \leq \text{Score} < 70$	C
$60 \leq \text{Score} < 65$	
$50 \leq \text{Score} < 60$	D
$40 \leq \text{Score} < 50$	
$0 \leq \text{Score} < 40$	E

## B. PLO of Physics Education Study Program

The PLO of Physics Education Study Program, Faculty of Teacher Training and Education, Mulawarman University as shown on table 1.

**Table 1. The PLO of Physics Education Study Program**

Aspect	Code	Description
<b>Knowledge</b>	PLO1	Understanding the fundamental concepts, principles, theories and branches of classical physics and being familiar with the modern physics
	PLO2	Applying technology, pedagogy, content, knowledge in the field of physics education
	PLO3	Applying the physics concepts in problem-solving
	PLO4	Understanding the connection among science-technology-engineering-mathematics and other related subjects
<b>General Skills</b>	PLO5	Extending the knowledge acquired in the Undergraduate's degree programme
	PLO6	Having communication skills in Indonesia language and being familiar with English
	PLO7	Considering the scientific ethics and professional principle as well as skills of responsibility and teamwork
<b>Specifics Skills</b>	PLO8	Having the skills to plan, implement and evaluate physics teaching and learning
	PLO9	Having the skills to plan, carry out and report the result of a physics experiment
	PLO10	Having the skills to design learning media for physics learning and physics experiment

## C. Assessment Result of Each PLO

### 1. PLO1 Assessment Result

The result of the PLO1 Assessment Result explained in Table 2, Figure 1, Table 3, and Figure 2.

**Table 2. Descriptive Statistics of the PLO1**

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
1	Basic Physics 1	76.17	73.22	74.695	80.55	84.00	0.00	19.26	80.6
2	Basic Physics Practicum 1	62.8	61.79	62.295	70	84	0	18.29	70
3	Basic Physics 2	72.88	69.08	70.98	71.3	90.5	0	14.00	63.5
4	Basic Physics Practicum 2	72.75	70.42	71.585	75	91	0	16.84	65
5	Mechanical	78.5	69.02	73.76	75.2	97.1	0	13.48	76.2
6	Mechanical Practicum	70.52	67.08	68.8	71	87	0	19.06	70
7	History of Physics	80.64	76.22	78.43	78	95	68	6.46	78
8	Basic Physics 3	71.84	68.83	70.335	72	87	40	11.43	70
9	Basic Physics Practicum 3	72.08	74.88	73.48	75	85	29	10.206	80
10	Thermodynamics	67.15	59.54	63.345	70	89	0	17.47	40
11	Electronics	62.65	57.3	59.975	64.1	67.6	0	13.24	64.1
12	Electronics Practicum	66.91	70.375	68.6425	73	76	0	18.1696192	73
13	Physics for Senior High School	83.7	73.48	78.59	81.9	95.9	0	18.055	87.5
14	Vibration and Waves	75.08	63.03	69.055	70.1	88.4	0	14.61	60
15	Practice on Vibrations and Waves	78.92	61.04	69.98	80	86	0	22.536	80
16	Electricity and Magnetism	68.89	61.74	65.315	69.7	83.7	0	16.098	70.1
17	Modern Physics	77.6	74.57	76.085	77.65	86	60.5	5.65	81
18	Optics	72.25	67.42	69.835	68.5	92	50	12.41	60
19	Laboratory Research	79	76.5	77.75	78.5	82	40	5.506	80
20	Education of Core Physics	74.57	74.12	74.345	75	80	65	2.849	75
21	Education of Quantum Physics	60.62	60.3	60.46	60	83	34	13.59	60
22	Introduction to Solid State Physics	66.01	64.77	65.39	65.75	83.25	51.5	8.053	68.25
23	Laboratory Management	75.1	71.52	73.31	75	80	70	3.346	75
<b>PLO1</b>				<b>70.28</b>					



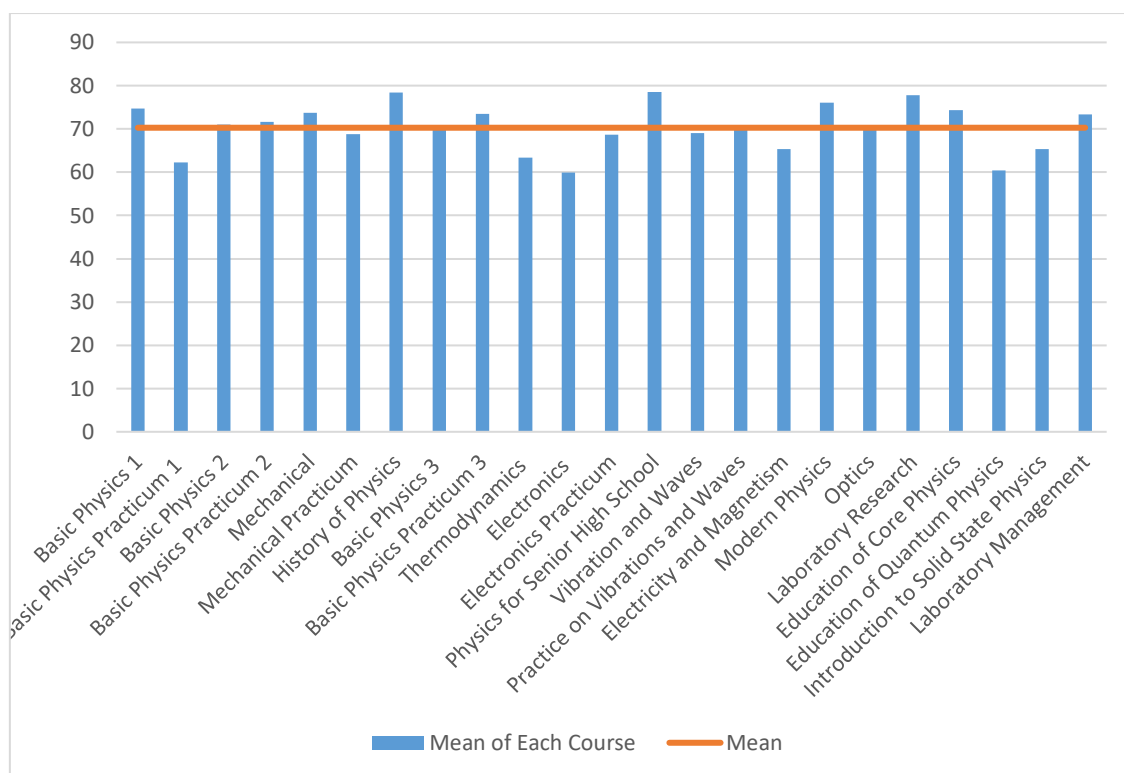


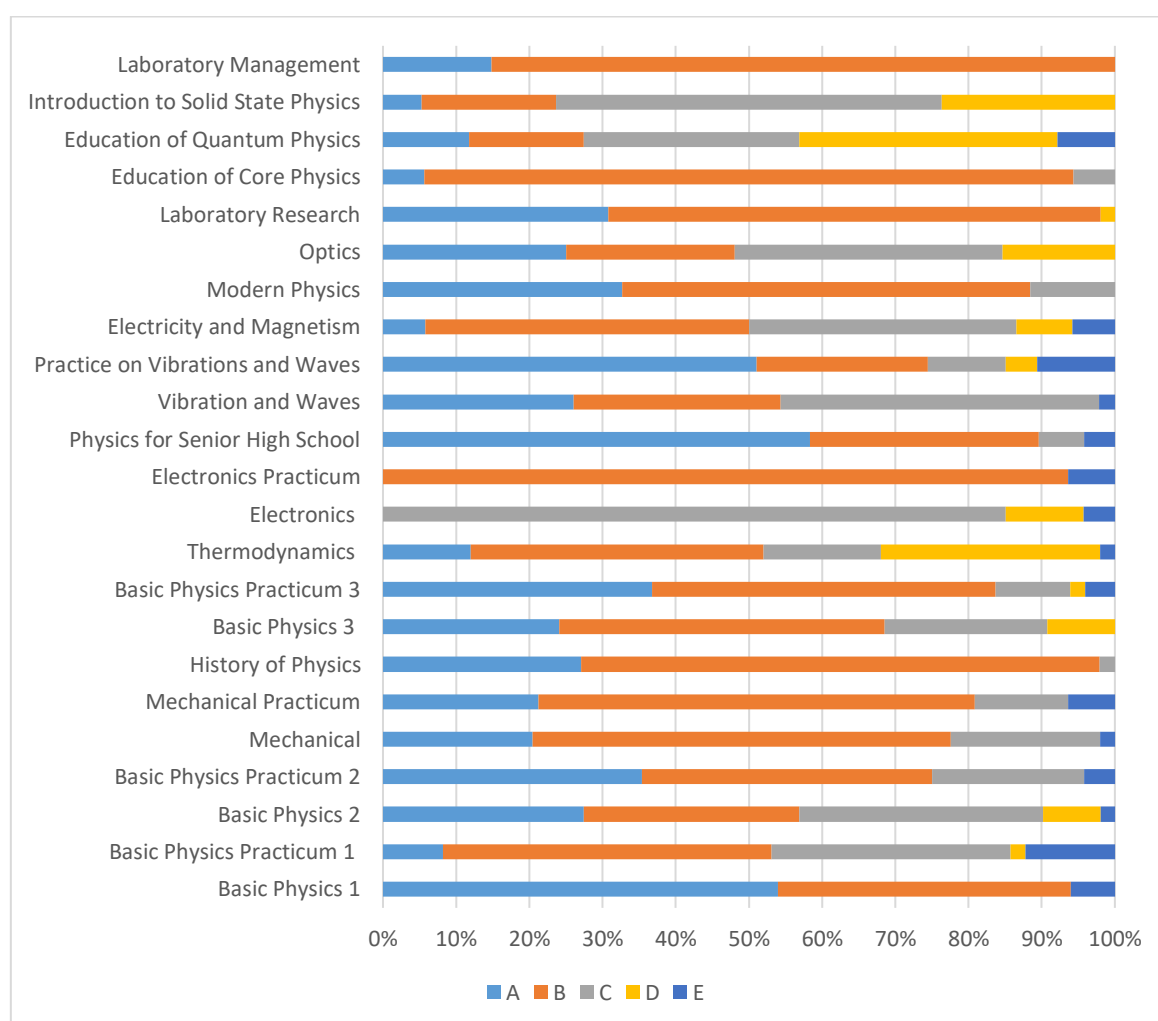
Figure 1. Mean Score of the PLO1

The distribution of the interpretation of students performance indicators on each course attached to the PLO1 reported in Table 3 and Figure 2.

Table 3. Student Grade Category

No	Course Name	Student Grade Category				
		A	B	C	D	E
1	Basic Physics 1	54%	40%	0%	0%	6%
2	Basic Physics Practicum 1	8.16%	44.9%	32.7%	2.04%	12.2%
3	Basic Physics 2	27.5%	29.4%	33.3%	7.84%	1.96%
4	Basic Physics Practicum 2	35.4%	39.6%	20.8%	0%	4.17%
5	Mechanical	20.4%	57.1%	20.4%	0%	2.04%
6	Mechanical Practicum	21.3%	59.6%	12.8%	0%	6.38%
7	History of Physics	27.1%	70.8%	2.08%	0%	0%
8	Basic Physics 3	24.1%	44.4%	22.2%	9.26%	0%
9	Basic Physics Practicum 3	36.7%	46.9%	10.2%	2.04%	4.08%
10	Thermodynamics	12%	40%	16%	30%	2%
11	Electronics	0%	0%	85.1%	10.6%	4.26%
12	Electronics Practicum	0%	93.6%	0%	0%	6.38%
13	Physics for Senior High School	58.3%	31.3%	6.25%	0%	4.17%

No	Course Name	Student Grade Category				
		A	B	C	D	E
14	Vibration and Waves	26.1%	28.3%	43.5%	0%	2.17%
15	Practice on Vibrations and Waves	51.1%	23.4%	10.6%	4.26%	10.6%
16	Electricity and Magnetism	5.8%	44.2%	36.5%	7.69%	5.77%
17	Modern Physics	32.7%	55.8%	11.5%	0%	0%
18	Optics	25%	23.1%	36.5%	15.4%	0%
19	Laboratory Research	30.8%	67.3%	0%	1.92%	0%
20	Education of Core Physics	5.66%	88.7%	5.66%	0%	0%
21	Education of Quantum Physics	11.8%	15.7%	29.4%	35.3%	7.84%
22	Introduction to Solid State Physics	5.26%	18.4%	52.6%	23.7%	0%
23	Laboratory Management	14.8%	85.2%	0%	0%	0%



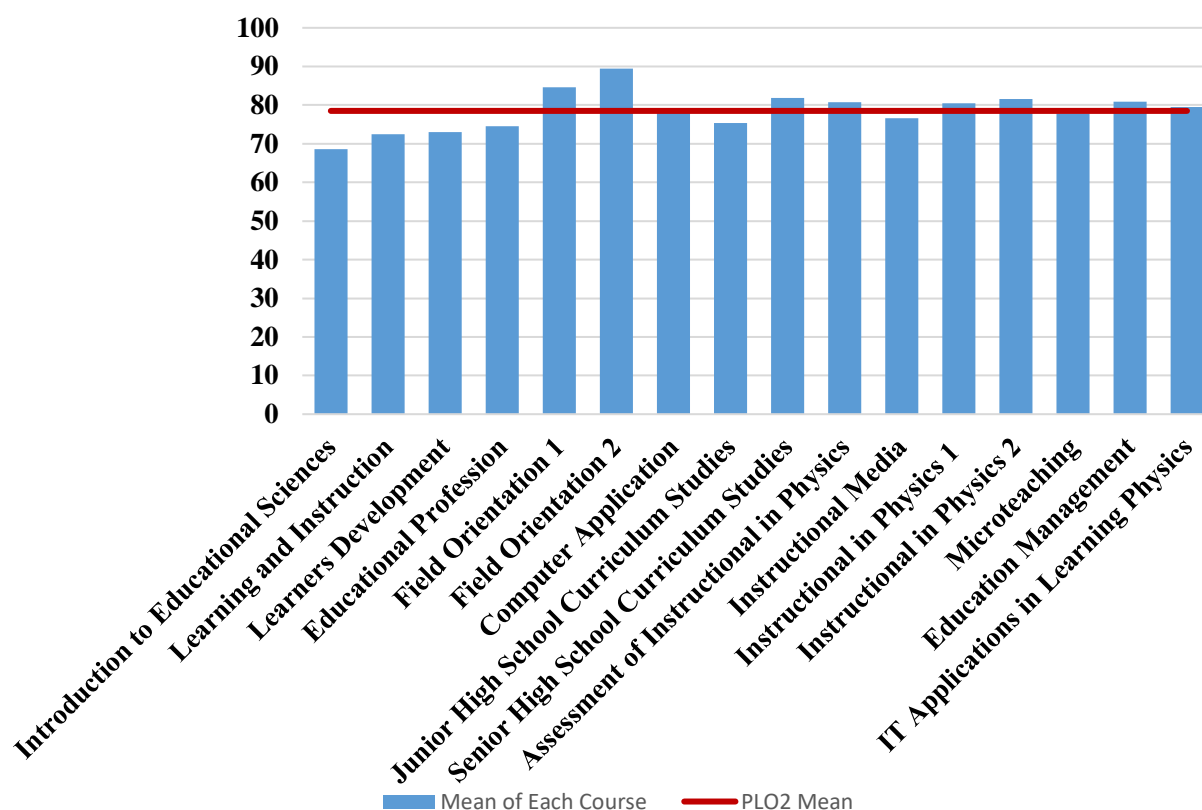
**Figure 2. Achievement Report of the PLO1**

## 2. PLO2 Assessment Result

The result of the PLO1 Assessment Result explained in Table 4, Figure 3. Table 5, and Figure 4.

**Table 4. Descriptive Statistics of the PLO2**

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
1	Introduction to Educational Sciences	66,3	70,9	68,6	73	80,2	0	15,5	73
2	Learning and Instruction	71,9	73,2	72,5	72,0	78	70	2,34	72
3	Learners Development	74,9	70,9	73,0	72,5	80	70	3,24	70
4	Educational Profession	79,6	69	74,5	78	91,9	10	14,3	80
5	Field Orientation 1	90,4	78,5	84,6	89,5	99,4	0	21	90
6	Field Orientation 2	90,4	88,3	89,4	90	99,4	80	4,8	90
7	Computer Application	81,2	76	78,6	81	88,5	0	12,5	82
8	Junior High School Curriculum Studies	77,8	72,9	75,4	76,4	91,7	61	6,3	80
9	Senior High School Curriculum Studies	84,6	78,8	81,9	88,9	94,5	0	20,5	94,5
10	Assessment of Instructional in Physics	82,1	79,1	80,8	81,4	93	88,2	6	79
11	Instructional Media	0	76,6	76,6	79,8	85,8	51,1	9	79,8
12	Instructional in Physics 1	81,2	79,8	80,5	80,5	88	76,2	2,2	80,2
13	Instructional in Physics 2	83,3	79,3	81,6	82,5	94,7	51,8	3,4	85,3
14	Microteaching	79,3	76,2	77,8	76,7	89,2	70,1	5,8	70,3
15	Education Management	81,2	80,8	80,9	80,8	88,5	78	2,8	78
16	IT Applications in Learning Physics	82,1	76,9	79,5	80	90	40	7,8	80
<b>PLO2</b>				<b>78,5</b>					



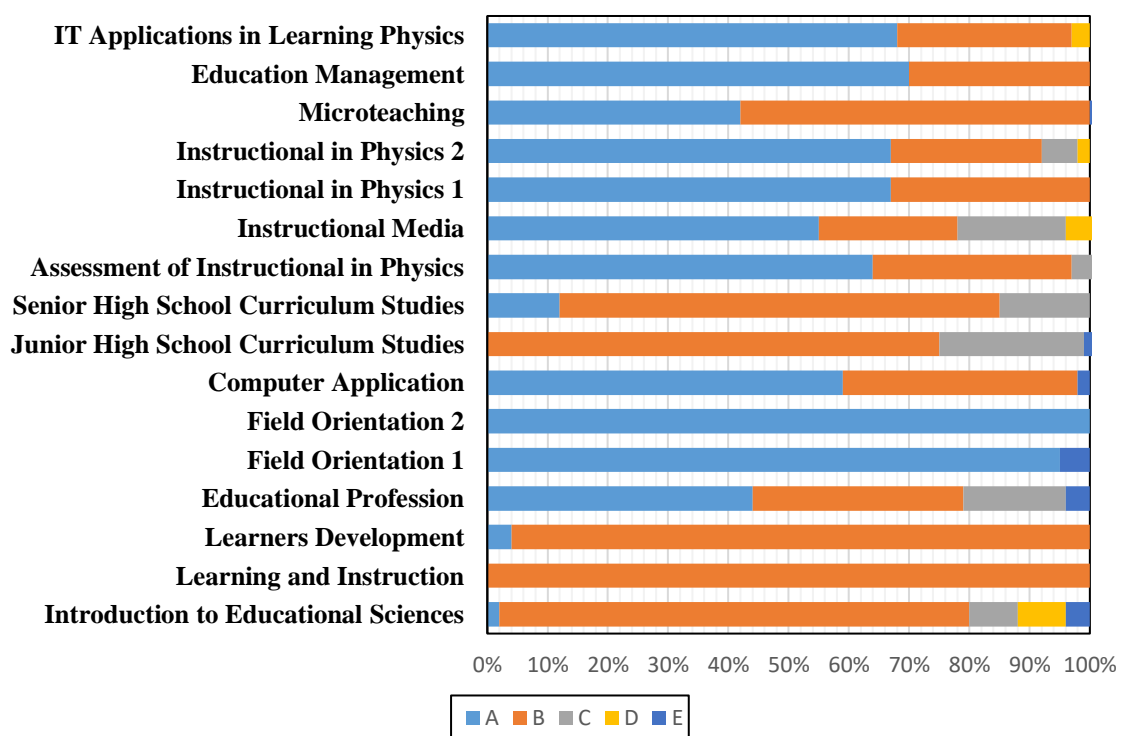
**Figure 3. Mean Score of the PLO2**

The distribution of the interpretation of students performance indicators on each course attached to the PLO2 reported in Table 5 and Figure 4.

**Table 5. Student Grade Category**

No	Course Name	Student Grade Category				
		A	B	C	D	E
1	Introduction to Educational Sciences	2%	78%	8%	8%	4%
2	Learning and Instruction	0%	100%	0%	0%	0%
3	Learners Development	4%	96%	0%	0%	0%
4	Educational Profession	44%	35%	17%	0%	4%
5	Field Orientation 1	95%	0%	0%	0%	5%
6	Field Orientation 2	100%	0%	0%	0%	0%
7	Computer Application	59%	39%	0%	0%	2%
8	Junior High School Curriculum Studies	0%	75%	24%	0%	2%
9	Senior High School Curriculum Studies	12%	73%	15%	0%	0%

No	Course Name	Student Grade Category				
		A	B	C	D	E
10	Assessment of Instructional in Physics	64%	33%	4%	0%	0%
11	Instructional Media	55%	23%	18%	5%	0%
12	Instructional in Physics 1	67%	33%	0%	0%	0%
13	Instructional in Physics 2	67%	25%	6%	2%	0%
14	Microteaching	42%	58%	0%	0%	10%
15	Education Management	70%	30%	0%	0%	0%
16	IT Applications in Learning Physics	68%	29%	0%	3%	0%



**Figure 4. Achievement Report of the PLO2**

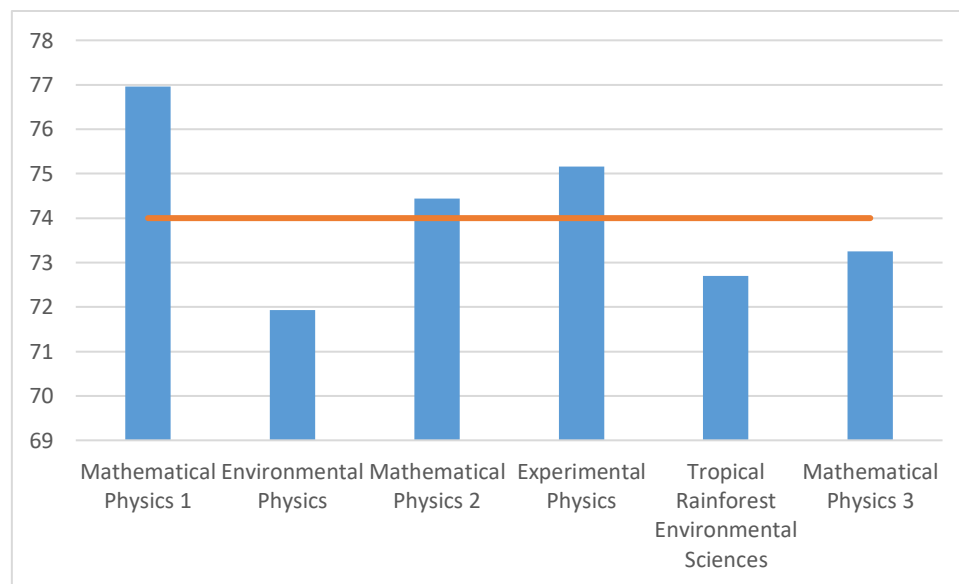
### 3. PLO3 Assessment Result

The result of the PLO3 Assessment Result explained in Table 6, Figure 5, Table 7, and Figure 6.

**Table 6. Descriptive Statistics of the PLO3**

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
1	Mathematical Physics 1	81.238	71.762	76.5	76	95	18	11.7021	85

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
2	Environmental Physics	74.17	69.7	71.935	73	84.6	45	7.67869	68.5
3	Mathematical Physics 2	76.286	72.684	74.485	74	92	65	7.19646	70
4	Experimental Physics	76.324	73.996	75.16	72.9	83.6	66.4	5.23416	70.1
5	Tropical Rainforest Environmental Sciences	75	70,3	72,7	72,4	78,4	67,5	4,5	72
6	Mathematical Physics 3	76.818	69.682	73.25	75	83	0	16.3893	75
<b>PLO3</b>				<b>74.998</b>					



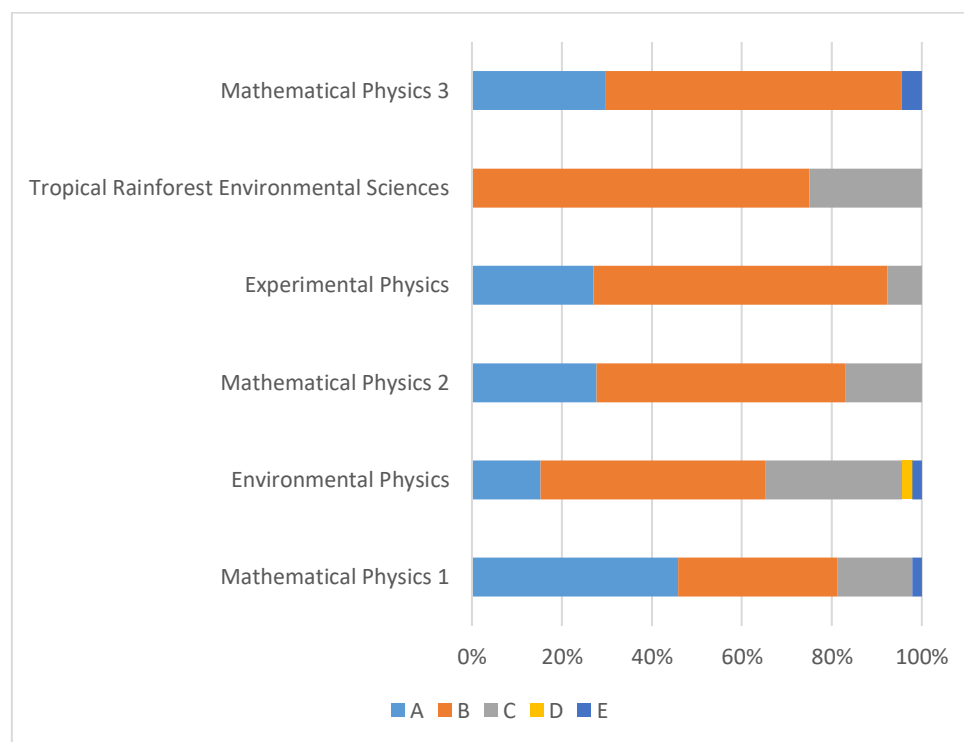
**Figure 5. Mean Score of the PLO3**

The distribution of the interpretation of students performance indicators on each course attached to the PLO3 reported in Table 7 and Figure 6.

**Table 7. Student Grade Category**

No	Course Name	Student Grade Category				
		A	B	C	D	E
1	Mathematical Physics 1	45.835	35.42%	16.67%	0%	2.08%
2	Environmental Physics	15.22%	50%	30.44%	2.17%	2.17%

No	Course Name	Student Grade Category				
		A	B	C	D	E
3	Mathematical Physics 2	27.66%	55.32%	17.02%	0%	0%
4	Experimental Physics	26.92%	65.38%	7.69%	0%	0%
5	Tropical Rainforest Environmental Sciences	0%	75%	25%	0%	0%
6	Mathematical Physics 3	29.54%	65.915	0%	0%	4.54%



**Figure 6. Achievement Report of the PLO3**

#### 4. PLO4 Assessment Result

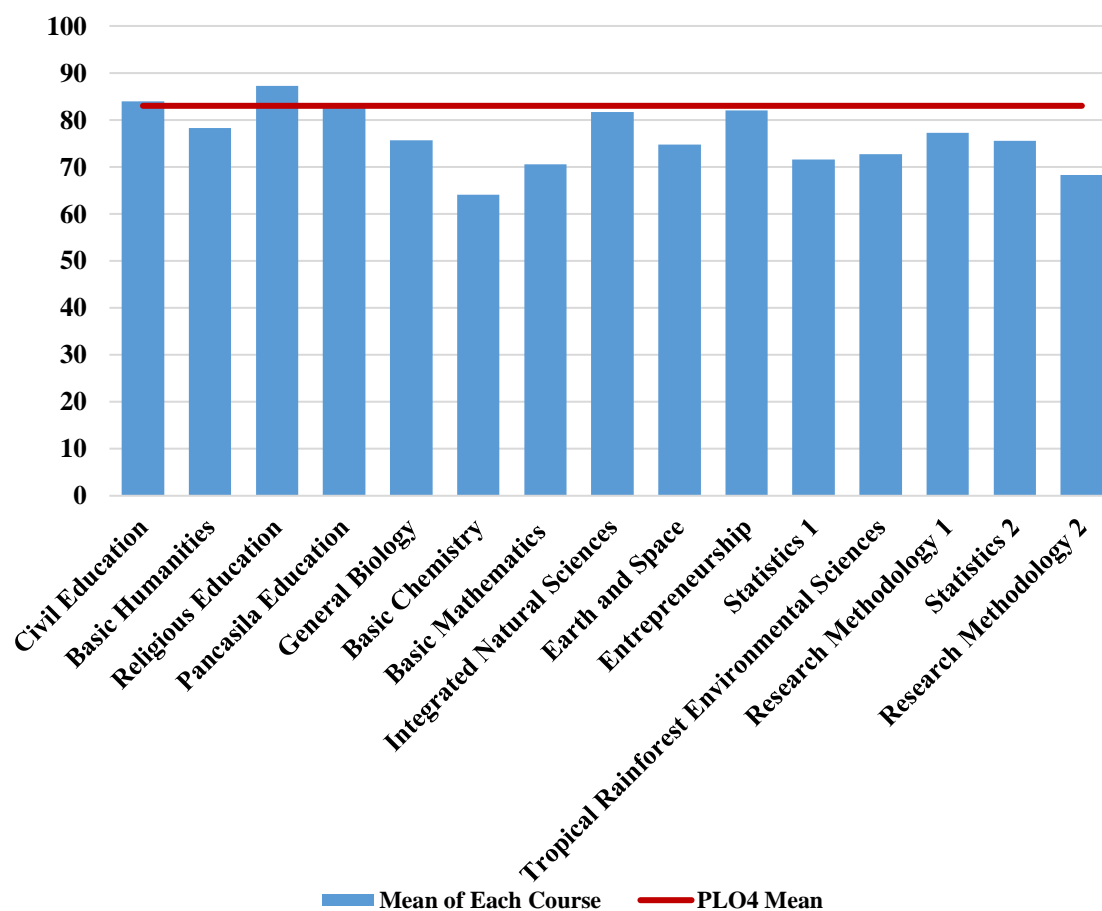
The result of the PLO4 Assessment Result explained in Table 8, Figure 7, Table 9, and Figure 8.

**Table 8. Descriptive Statistics of the PLO4**

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
1	Civil Education	83,9	83,9	83,9	84	90	82	1,4	84
2	Basic Humanities	79,9	76,7	78,3	80	81,6	65	3,7	80

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
3	Religious Education	87	87,3	87,2	88	93,6	81,4	2,82	88
4	Pancasila Education	85	81	83	87,6	90,5	0	21,5	90,5
5	General Biology	74,9	76,6	75,7	78,1	81	48	7,6	77,7
6	Basic Chemistry	64,6	63,6	64,1	70,0	88,8	0,0	19,7	60,1
7	Basic Mathematics	66,6	74,5	70,5	75,8	88,7	0,0	18,6	72,5
8	Integrated Natural Sciences	80,8	83,3	81,7	82,5	98,0	0,0	12,3	76,5
9	Earth and Space	80	69,2	74,8	79,2	87,1	0,0	16,5	70,0
10	Entrepreneurship	82,6	81,1	82,0	82,2	85,5	78,2	1,9	82,2
11	Statistics 1	71,9	71,2	71,6	73,3	83,8	38,2	8,0	67
12	Tropical Rainforest Environmental Sciences	75	70,3	72,7	72,4	78,4	67,5	4,5	72
13	Research Methodology 1	79,2	75,3	77,3	78,7	88,8	35,0	8,8	82,1
14	Statistics 2	79,2	72,1	75,5	75,8	92,8	38,4	10,2	82,4
15	Research Methodology 2	71,4	65,1	68,3	73,0	90,0	0	16,5	75,0
<b>PLO4</b>				<b>83</b>					





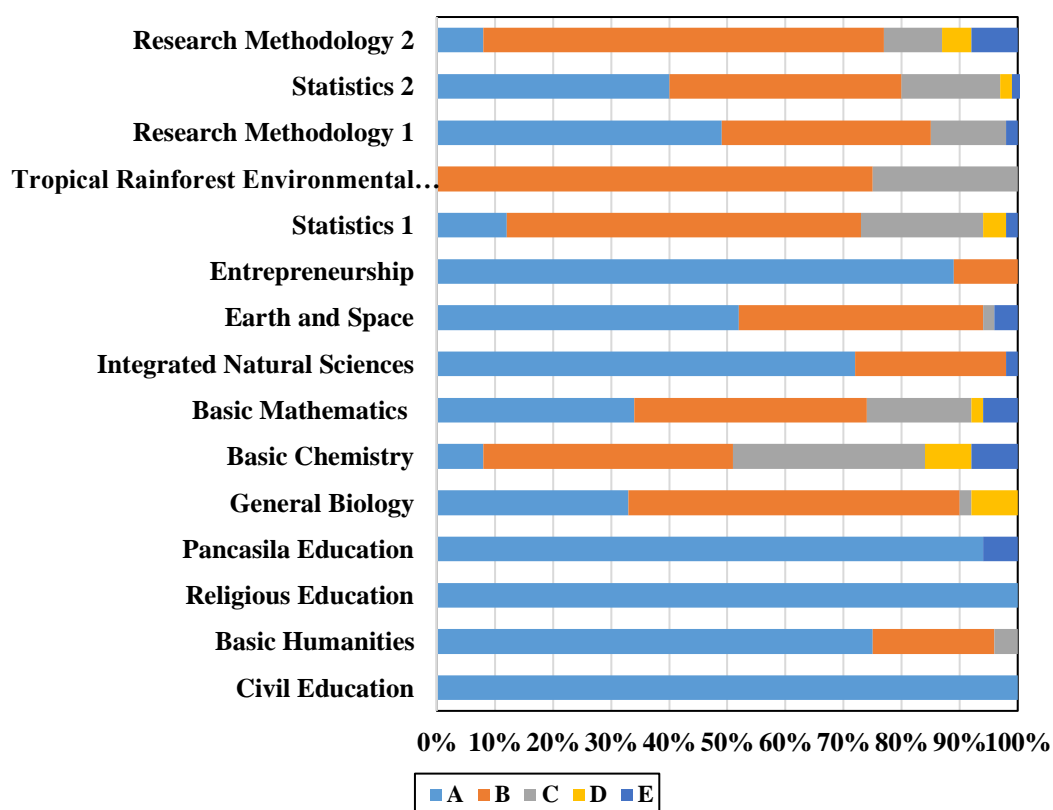
**Figure 7. Mean Score of the PLO4**

The distribution of the interpretation of students performance indicators on each course attached to the PLO4 reported in Table 9 and Figure 8.

**Table 9. Student Grade Category**

No	Course Name	Student Grade Category				
		A	B	C	D	E
1	Civil Education	100%	0%	0%	0%	0%
2	Basic Humanities	75%	21%	4%	0%	0%
3	Religious Education	100%	0%	0%	0%	0%
4	Pancasila Education	94%	0%	0%	0%	6%
5	General Biology	33%	57%	2%	8%	0%
6	Basic Chemistry	8%	43%	33%	8%	8%
7	Basic Mathematics	34%	40%	18%	2%	6%
8	Integrated Natural Sciences	72%	26%	0%	0%	2%

9	Earth and Space	52%	42%	2%	0%	4%
10	Entrepreneurship	89%	11%	0%	0%	0%
11	Statistics 1	12%	61%	21%	4%	2%
12	Tropical Rainforest Environmental Sciences	0%	75%	25%	0%	0%
13	Research Methodology 1	49%	36%	13%	0%	2%
14	Statistics 2	40%	40%	17%	2%	2%
15	Research Methodology 2	8%	69%	10%	5%	8%



**Figure 8. Achievement Report of the PLO4**

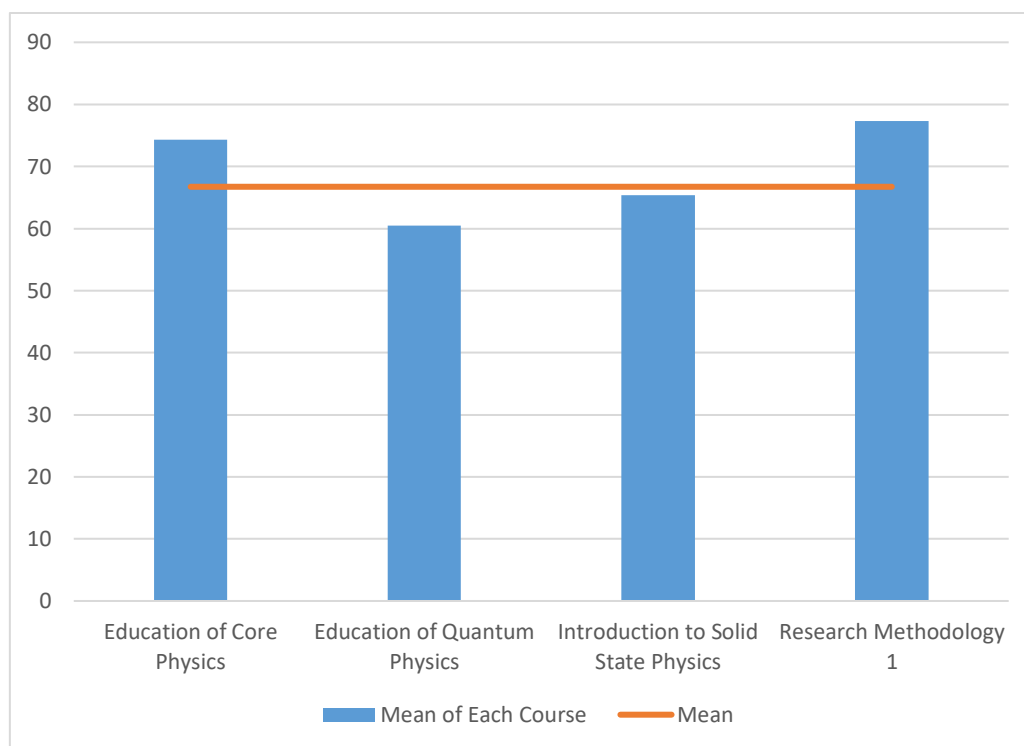
## 5. PLO5 Assessment Result

The result of the PLO5 Assessment Result explained in Table 10, Figure 9, Table 11, and Figure 10.

**Table 10. Descriptive Statistics of the PLO5**

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
1	Education of Core Physics	74.57	74.12	74.345	75	80	65	2.849	75
2	Education of Quantum Physics	60.62	60.3	60.46	60	83	34	13.59	60

3	Introduction to Solid State Physics	66.01	64.77	65.39	65.75	83.25	51.5	8.053	68.25
4	Research Methodology 1	79,2	75,3	77,3	78,7	88,8	35,0	8,8	82,1
<b>PLO5</b>		<b>66.73</b>							

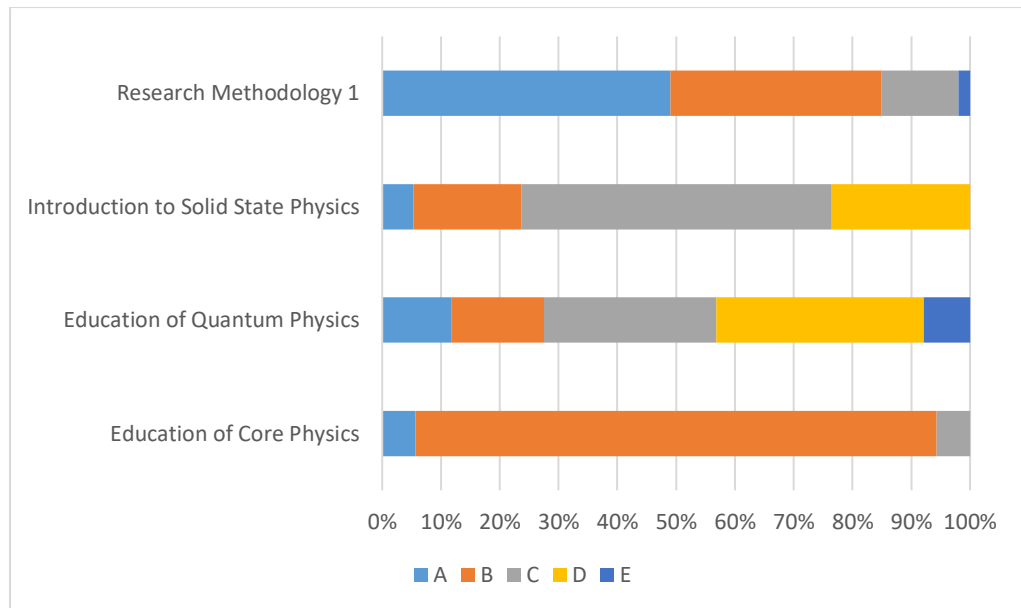


**Figure 9. Mean Score of the PLO5**

The distribution of the interpretation of students performance indicators on each course attached to the PLO5 reported in Table 11 and Figure 10.

**Table 11. Student Grade Category**

No	Course Name	Student Grade Category				
		A	B	C	D	E
1	Education of Core Physics	5.66%	88.68%	5.66%	0%	0%
2	Education of Quantum Physics	11.8%	15.69%	29.4%	35.29%	7.84%
3	Introduction to Solid State Physics	5.26%	18.42%	52.6%	23.68%	0%
4	Research Methodology 1	49%	36%	13%	0%	2%



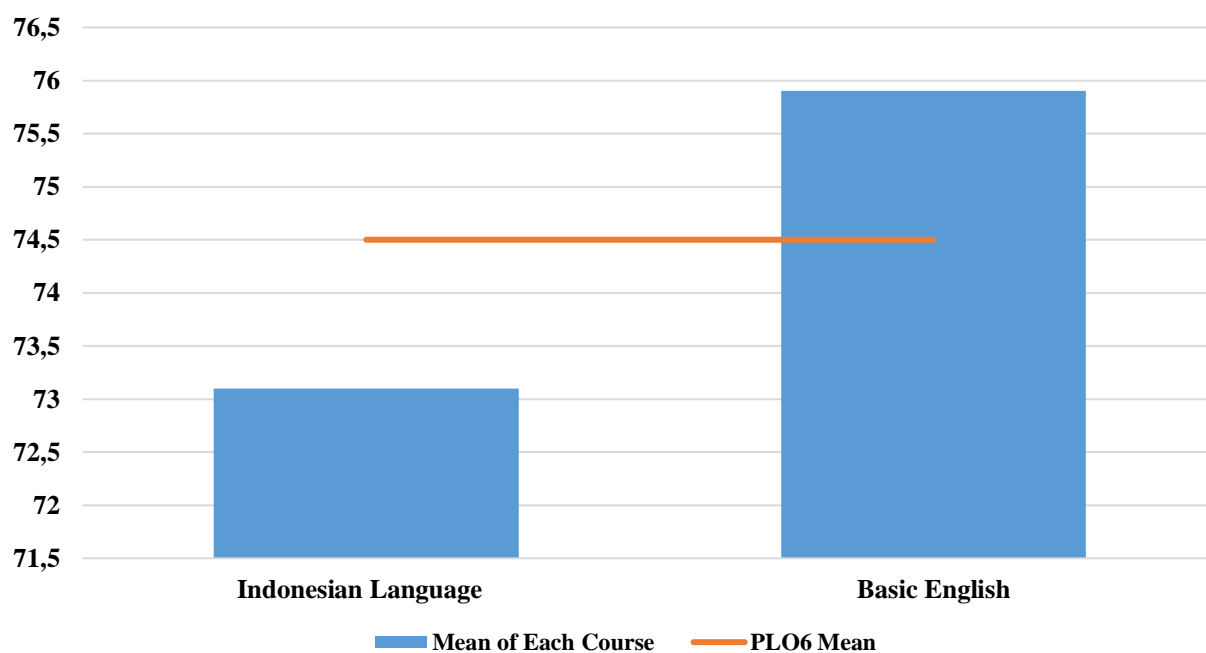
**Figure 10. Achievement Report of the PLO5**

## 6. PLO6 Assessment Result

The result of the PLO6 Assessment Result explained in Table 12, Figure 11, Table 13, and Figure 12.

**Table 12. Descriptive Statistics of the PLO6**

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
1	Indonesian Language	78,3	70,9	73,1	78,8	83,3	0	19,4	80,0
2	Basic English	78,8	73,7	75,9	79,0	85,0	0	13,2	85,0
<b>PLO6</b>				<b>74,5</b>					

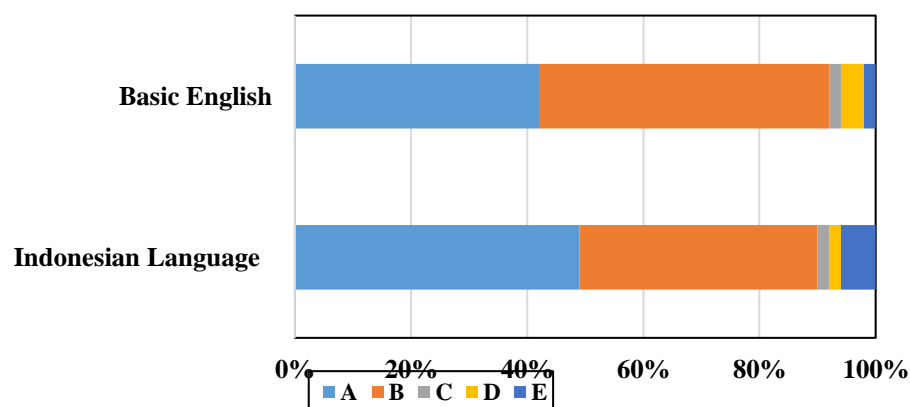


**Figure 11. Mean Score of the PLO6**

The distribution of the interpretation of students performance indicators on each course attached to the PLO6 reported in Table 13 and Figure 12.

**Table 13. Student Grade Category**

No	Course Name	Student Grade Category				
		A	B	C	D	E
1	Indonesian Language	49%	41%	2%	2%	6%
2	Basic English	42%	50%	2%	4%	2%



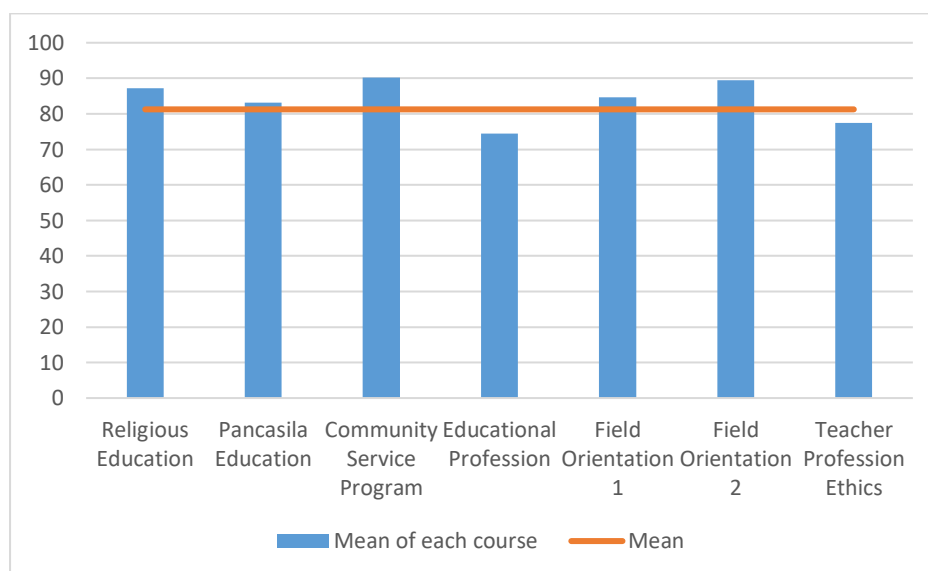
**Figure 12. Achievement Report of the PLO6**

## 7. PLO7 Assessment Result

The result of the PLO7 Assessment Result explained in Table 14, Figure 13, Table 15, and Figure 14.

**Table 14. Descriptive Statistics of the PLO7**

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
1	Religious Education	87	87,3	87,2	88	93,6	81,4	2,82	88
2	Pancasila Education	85	81.0125	83.0063	87.6	90.5	0	21.4778	90.5
3	Community Service Program	90.0579	90.3063	90.1821	90	99.4	81.7	4.60368	90
4	Educational Profession	79.794	69.003	74.3985	77.975	91.85	10	14.3399	80
5	Field Orientation 1	90,4	78,5	84,6	89,5	99,4	0	21	90
6	Field Orientation 2	90,4	88,3	89,4	90	99,4	80	4,8	90
7	Teacher Profession Ethics	79.8652	74.9789	77.4221	79.4	84.3	19	9.79742	79.6
<b>PLO7</b>		<b>81.25</b>							

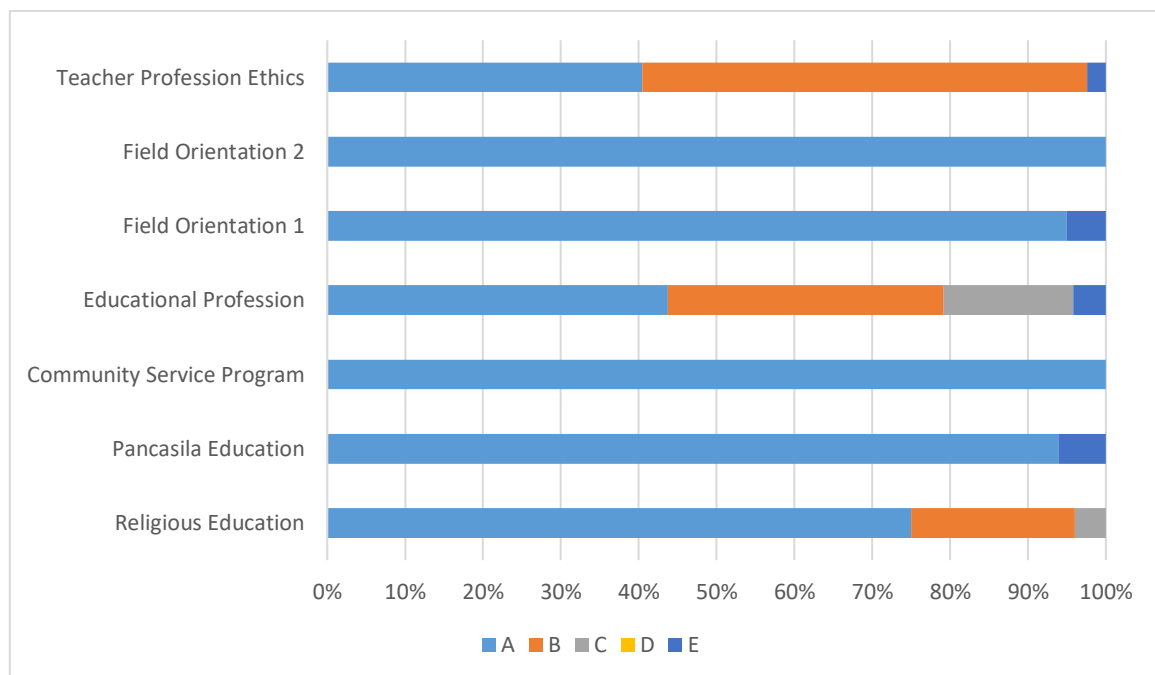


**Figure 13. Mean Score of the PLO7**

The distribution of the interpretation of students performance indicators on each course attached to the PLO7 reported in Table 15 and Figure 14.

**Table 15. Student Grade Category**

No	Course Name	Student Grade Category				
		A	B	C	D	E
1	Religious Education	75%	21%	4%	0%	0%
2	Pancasila Education	93.88%	0%	0%	0%	6.12%
3	Community Service Program	100%	0%	0%	0%	0%
4	Educational Profession	43.75%	35.42%	16.67%	0%	4.17%
5	Field Orientation 1	95%	0%	0%	0%	5%
6	Field Orientation 2	100%	0%	0%	0%	0%
7	Teacher Profession Ethics	40.48%	57.14%	0%	0%	2.38%

**Figure 14. Achievement Report of the PLO7**

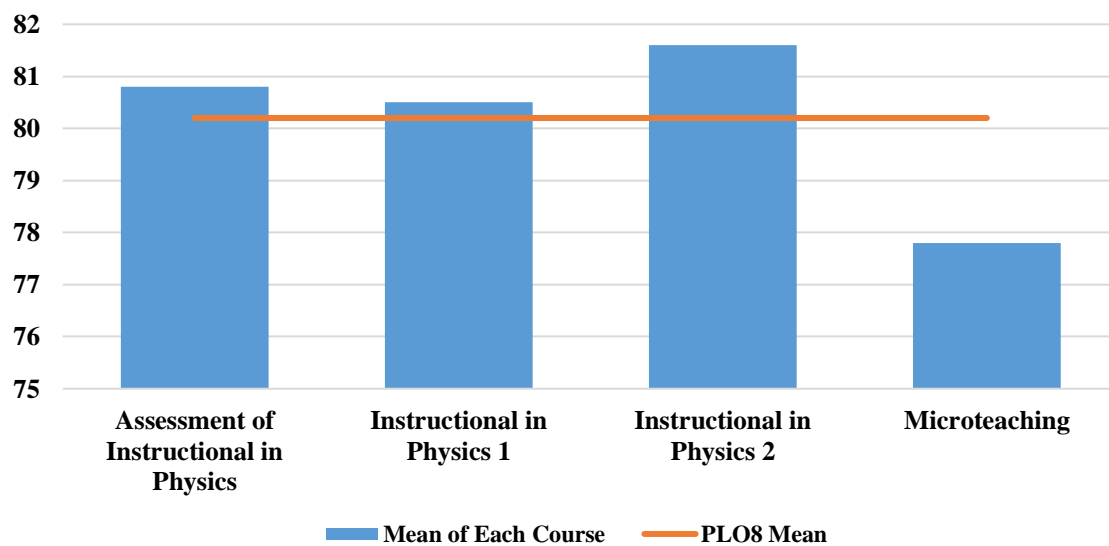
## 8. PLO8 Assessment Result

The result of the PLO8 Assessment Result explained in Table 16, Figure 15, Table 17, and Figure 16.

**Table 16. Descriptive Statistics of the PLO8**

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
1	Assessment of Instructional in Physics	82,1	79,1	80,8	81,4	93,0	66,2	5,98	79

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
2	Instructional in Physics 1	81,2	79,8	80,5	80,5	88	76,2	2,2	79
3	Instructional in Physics 2	83,8	79,2	81,6	82,5	94,7	51,8	8,4	85,3
4	Microteaching	79,3	76,2	77,8	76,7	89,2	70,1	5,8	70,3
<b>PLO8</b>				<b>80,2</b>					



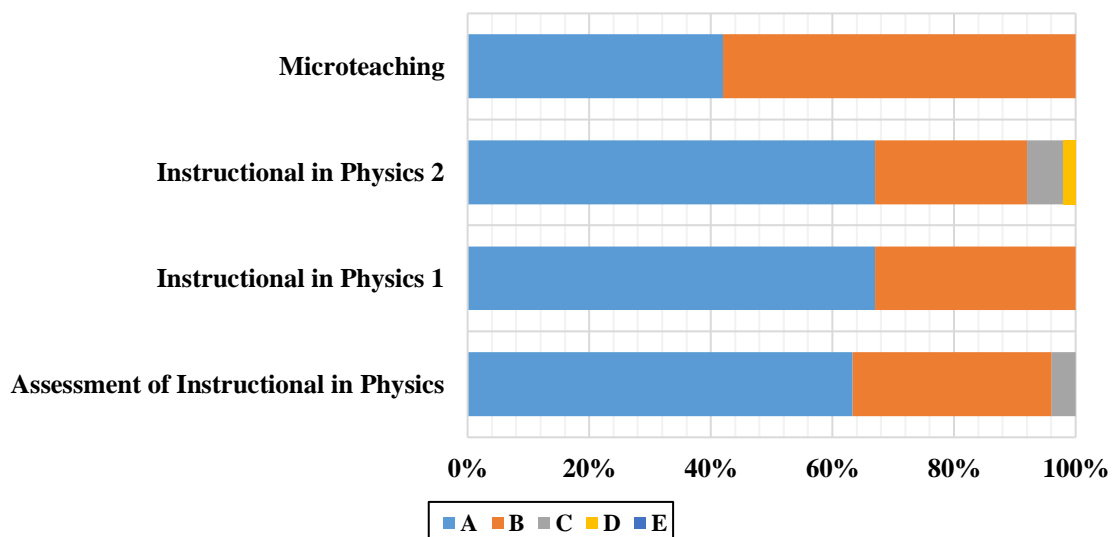
**Figure 15. Mean Score of the PLO8**

The distribution of the interpretation of students performance indicators on each course attached to the PLO8 reported in Table 17 and Figure 16.

**Table 17. Student Grade Category**

No	Course Name	Student Grade Category				
		A	B	C	D	E
1	Assessment of Instructional in Physics	64%	33%	4%	0%	0%
2	Instructional in Physics 1	67%	33%	0%	0%	0%
3	Instructional in Physics 2	67%	25%	6%	2%	0%
4	Microteaching	42%	58%	0%	0%	0%





**Figure 16. Achievement Report of the PLO8**

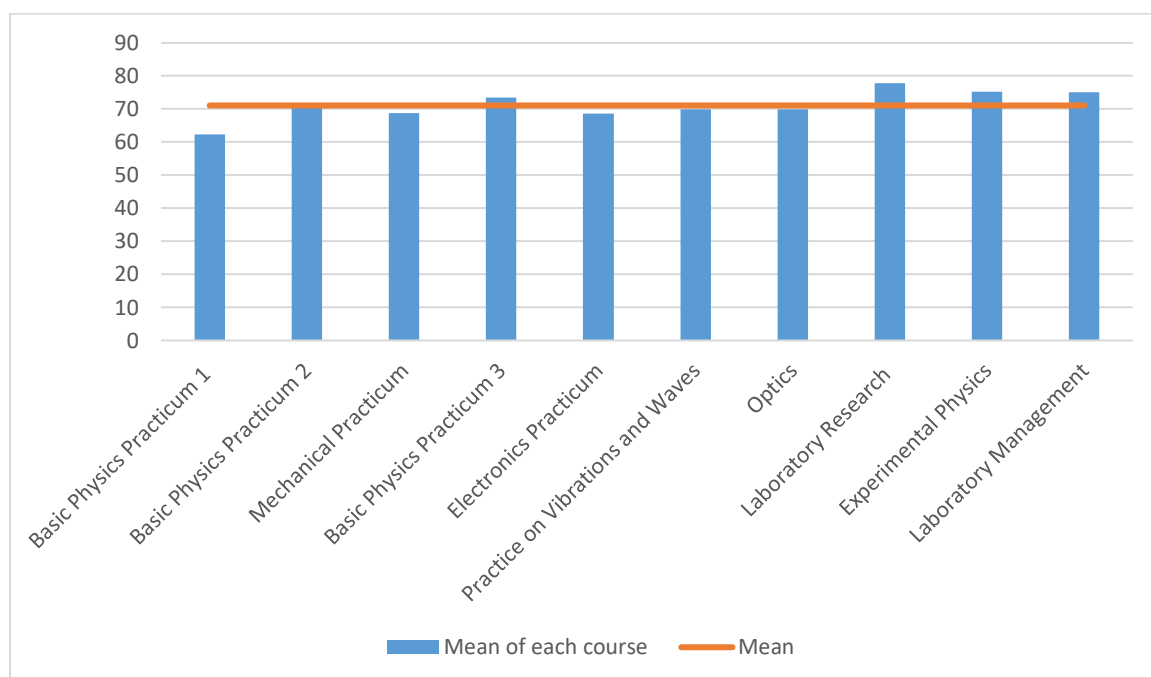
## 9. PLO9 Assessment Result

The result of the PLO9 Assessment Result explained in Table 18, Figure 17, Table 19, and Figure 18.

**Table 18. Descriptive Statistics of the PLO9**

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
1	Basic Physics Practicum 1	62.8	61.79	62.295	70	84	0	18.29	70
2	Basic Physics Practicum 2	72.75	70.42	71.585	75	91	0	16.84	65
3	Mechanical Practicum	70.52	67.08	68.8	71	87	0	19.06	70
4	Basic Physics Practicum 3	72.08	74.88	73.48	75	85	29	10.206	80
5	Electronics Practicum	66.91	70.375	68.6425	73	76	0	18.17	73
6	Practice on Vibrations and Waves	78.92	61.04	69.98	80	86	0	22.536	80
7	Optics	72.25	67.42	69.835	68.5	92	50	12.41	60
8	Laboratory Research	79	76.5	77.75	78.5	82	40	5.506	80
9	Experimental Physics	76.3241	73.9957	75.1599	72.9	83.6	66.4	5.23416	70.1

10	Laboratory Management	75.1	71.52	73.31	75	80	70	3.346	75
<b>PLO9</b>		<b>71.08</b>							

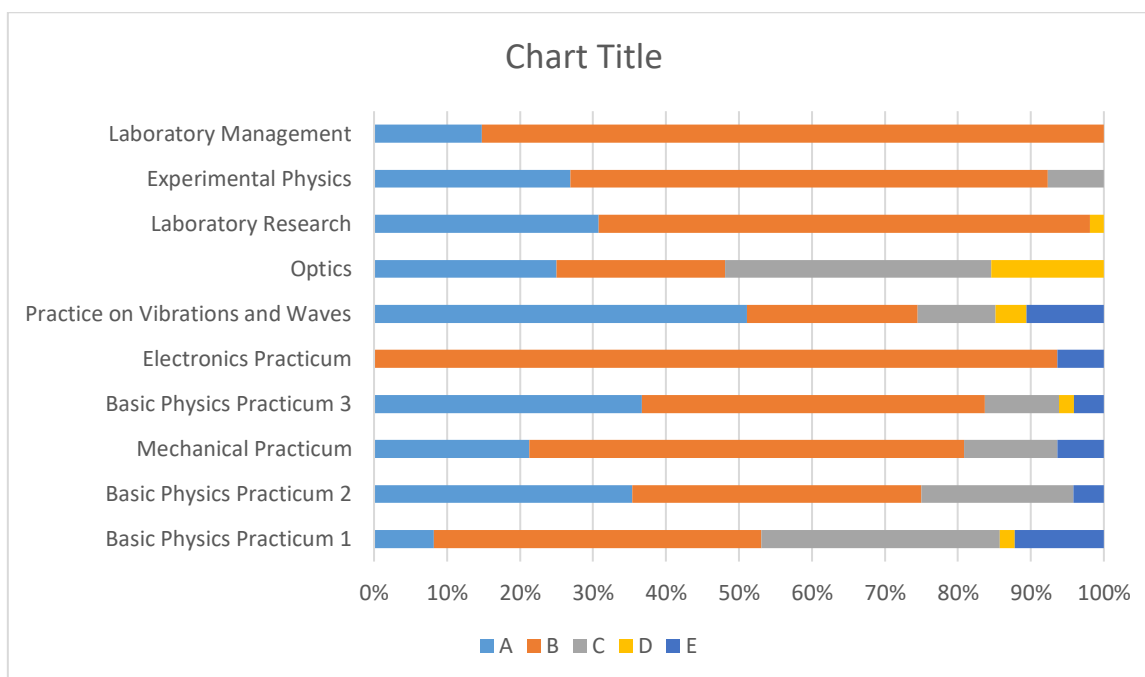


**Figure 17. Mean Score of the PLO9**

The distribution of the interpretation of students performance indicators on each course attached to the PLO8 reported in Table 19 and Figure 17.

**Table 19. Student Grade Category**

No	Course Name	Student Grade Category				
		A	B	C	D	E
1	Basic Physics Practicum 1	8.16%	44.9%	32.65%	2.04%	12.2%
2	Basic Physics Practicum 2	35.4%	39.58%	20.83%	0%	4.17%
3	Mechanical Practicum	21.3%	59.57%	12.77%	0%	6.38%
4	Basic Physics Practicum 3	36.7%	46.94%	10.2%	2.04%	4.08%
5	Electronics Practicum	0%	93.62%	0%	0%	6.38%
6	Practice on Vibrations and Waves	51.1%	23.4%	10.64%	4.26%	10.6%
7	Optics	25%	23.08%	36.54%	15.4%	0%
8	Laboratory Research	30.8%	67.31%	0%	1.92%	0%
9	Experimental Physics	26.9%	65.38%	7.69%	0%	0%
10	Laboratory Management	14.8%	85.19%	0%	0%	0%



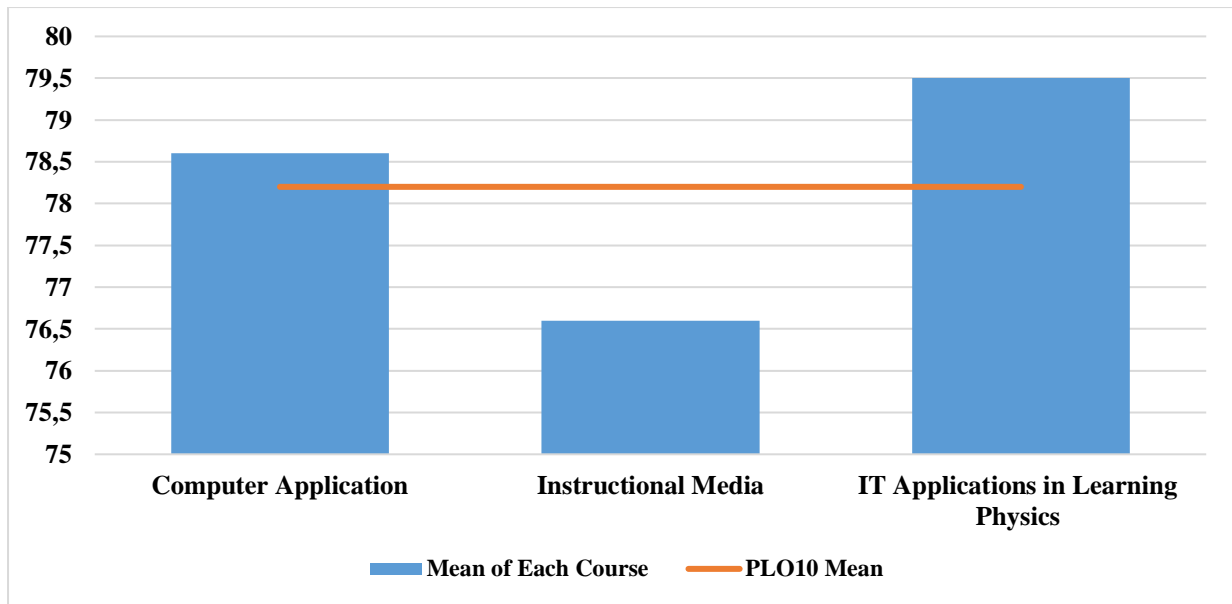
**Figure 18. Achievement Report of the PLO9**

## 10. PLO10 Assessment Result

The result of the PLO10 Assessment Result explained in Table 20, Figure 19, Table 21, and Figure 20.

**Table 20. Descriptive Statistics of the PLO10**

No.	Course Name	DPNA A Score	DPNA B Score	DPNA Score	Median	Max	Min	SD	Modus
1	Computer Application	81,2	76	78,6	81	88,5	0	12,5	82
2	Instructional Media	0	76,6	76,6	79,8	85,8	51,1	9,03	79,8
3	IT Applications in Learning Physics	82,1	76,9	79,5	80	90	40	7,8	80
<b>PLO10</b>				<b>78,2</b>					

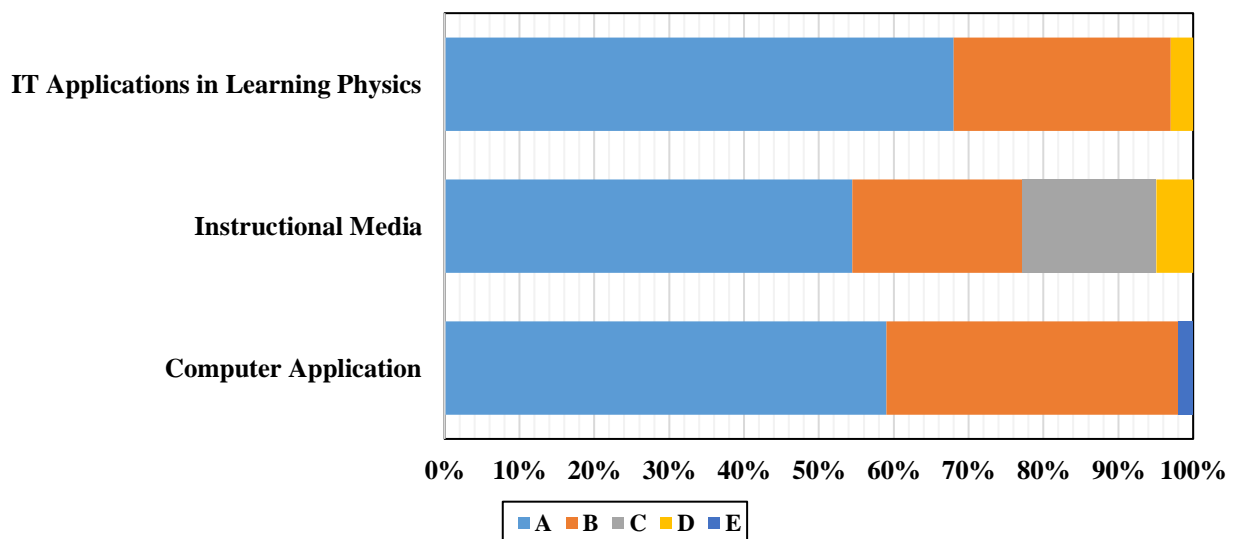


**Figure 19. Mean Score of the PLO10**

The distribution of the interpretation of students performance indicators on each course attached to the PLO8 reported in Table 21 and Figure 20.

**Table 21. Student Grade Category**

No	Course Name	Student Grade Category				
		A	B	C	D	E
1	Computer Application	59%	39%	0%	0%	2%
2	Instructional Media	55%	23%	18%	5%	0%
3	IT Applications in Learning Physics	68%	29%	0%	3%	0%

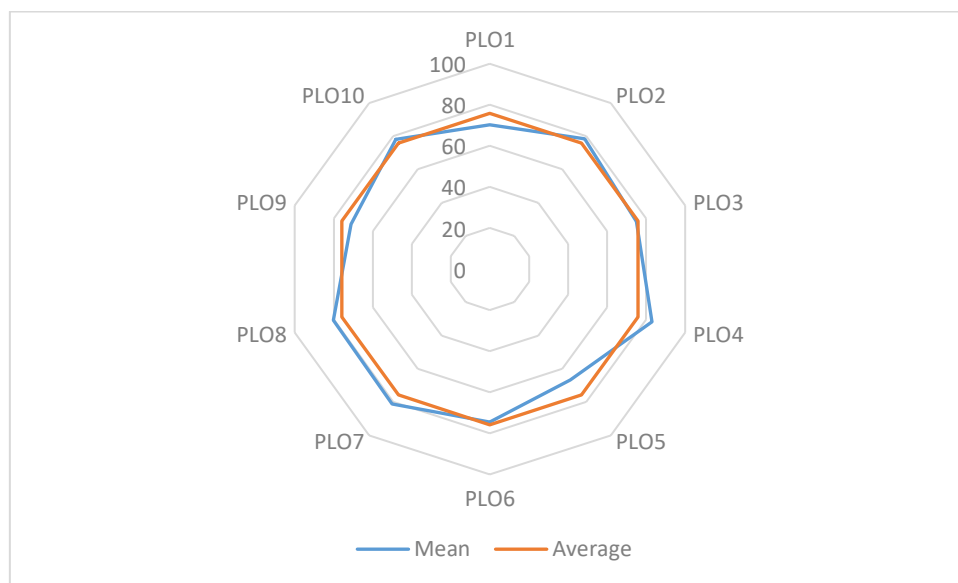


**Figure 20. Achievement Report of the PLO10**

## D. Summary of the PLO of Physics Education Study Program Assessment

### 1. Average of Mean

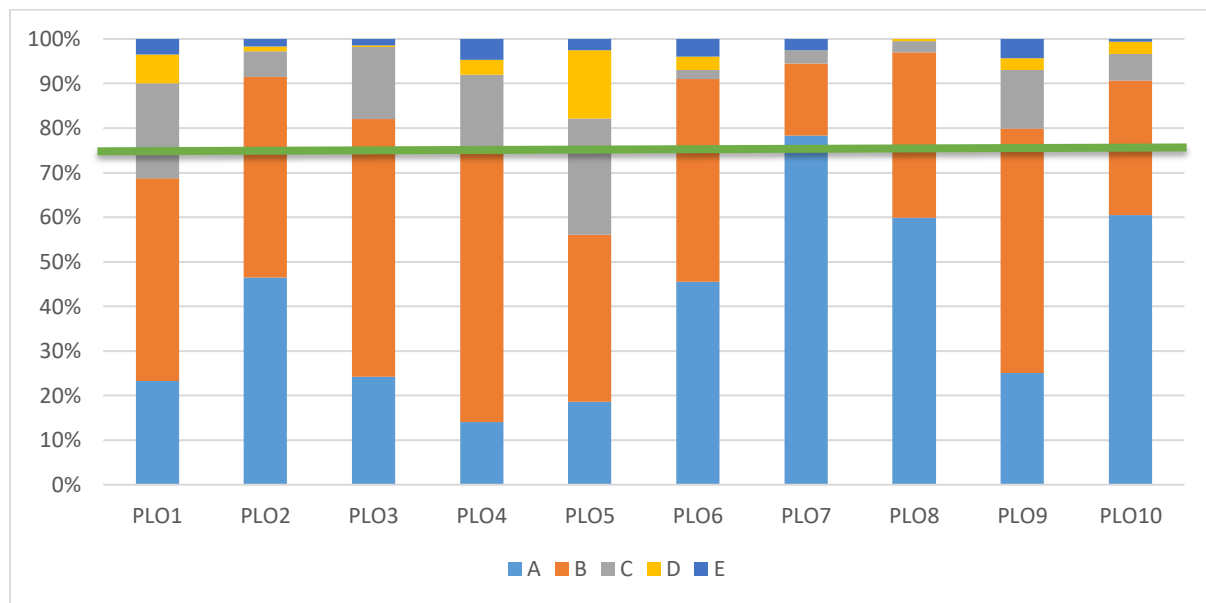
The measurement of each PLO can be obtained from the mean value obtained based on the student learning outcomes. The mean score for all PLOs in the 2020/2021 Academic Year is 75,26. The comparison of the mean performance of each PLO with the overall mean is presented in figure 21.



**Figure 21. Comparison among Average of Mean and Mean of each PLO**

Based on Figure 21, it can be seen that PLO 1, PLO 3, PLO 5, PLO 6, and PLO 9 are below the average. Most of the courses related to the PLO-PLO are courses related to physics content. This indicates that all modules assigned to the PLO-PLO should be evaluated and the learning process improved in the school year.

## 2. PLO Assessment based on Students Performance



**Figure 22. Achievement report based on students performance**

The results of the PLO assessment show that the achievement of students who reach category A above the average line is PLO 7, category B above the average is PLO 2, PLO 3, PLO 4, PLO 6, PLO 8, PLO 9, and PLO 10. Categories A and B below the average are PLO 1 and PLO 5, this shows the need to evaluate all courses related to PLO 1 and PLO 5. The learning process in the 2021/2022 Academic Year is quite successful. This is indicated by the small percentage of students whose achievements are in the Failed category (E).