

**MODULE PORTOFOLIO**  
**ODD SEMESTER ACADEMIC YEAR 2020/2021**

MODULE NAME	:	Data Intelligence	Lecture																																																																			
CLASS	:	2017 and 2018	Arum Handini Primandari, M.Sc.																																																																			
SEMESTER	:	7																																																																				
DATE	:	15 January 2021																																																																				
PROGRAM LEARNING OUTCOME AND COURSE OUTCOME	:	<p><b>PLO (PPa: Intelligence)</b> mastering the concepts of probability theory and statistics, mathematics, calculus, elementary linear algebra, statistical analysis methods, and the basic of computer programming.</p> <p>After completing this course, the students have ability to:</p> <p>CO 1. use an open-source software, Python</p> <p>CO 2. compile programming codes for theory af probability and statistics</p> <p>CO 3. compose intelligent computer programming or data analysis</p> <p style="text-align: center;">Mapping CO and PLO</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">CO</th> <th colspan="12">PLO</th> </tr> <tr> <th>E</th> <th>N</th> <th>T</th> <th>H</th> <th>U</th> <th>S</th> <th>I</th> <th>A</th> <th>S</th> <th>T</th> <th>I</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>CO1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>√</td> <td></td> </tr> <tr> <td>CO2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>√</td> <td></td> </tr> <tr> <td>CO3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>√</td> <td></td> </tr> </tbody> </table>		CO	PLO												E	N	T	H	U	S	I	A	S	T	I	C	CO1												√		CO2												√		CO3												√	
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LEARNING STRATEGIES	:	This course was done with several strategies such as discussion, presentation, and individual project.																																																																				
ASSESSMENT	:	<p>The final mark will be weighted as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>No</th> <th>Assessment components</th> <th>Assessment types</th> <th>Weight (percentage)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CO 1</td> <td>Quiz</td> <td>10%</td> </tr> <tr> <td>2</td> <td rowspan="2">CO 2</td> <td>Assignment</td> <td>10%</td> </tr> <tr> <td></td> <td>Midterm Exam</td> <td>20%</td> </tr> <tr> <td></td> <td></td> <td><b>Subtotal</b></td> <td><b>30%</b></td> </tr> <tr> <td>3</td> <td rowspan="3">CO 3</td> <td>Assignment</td> <td>15%</td> </tr> <tr> <td></td> <td>Midterm Exam</td> <td>10%</td> </tr> <tr> <td></td> <td>Final Exam</td> <td>35%</td> </tr> <tr> <td></td> <td></td> <td><b>Subtotal</b></td> <td><b>60%</b></td> </tr> <tr> <td></td> <td></td> <td><b>Total of percentage (weight)</b></td> <td><b>100%</b></td> </tr> </tbody> </table> <p>1. Quiz</p> <ol style="list-style-type: none"> <li>a. The quiz is given once after student make installation of python using anaconda distribution</li> <li>b. Student also learn about python language: the benefits, some sort of example use, etc.</li> </ol> <p>2. Assignment</p> <ol style="list-style-type: none"> <li>a. Assignment was given at least four times during a semester, they are python data structure, python iteration, python library, and python data analysis.</li> </ol>		No	Assessment components	Assessment types	Weight (percentage)	1	CO 1	Quiz	10%	2	CO 2	Assignment	10%		Midterm Exam	20%			<b>Subtotal</b>	<b>30%</b>	3	CO 3	Assignment	15%		Midterm Exam	10%		Final Exam	35%			<b>Subtotal</b>	<b>60%</b>			<b>Total of percentage (weight)</b>	<b>100%</b>																														
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- b. Every assignment utilized jupyter notebook containing code program of data/statistics problems. Students solved the problems by compose a new code or complete an existing code. Later, they exported the jupyter notebook into PDF form, then submitted it.
  - c. The assignment was an individual work. However they could discuss it with peers.
  - d. The schedule of assignment was stated in the lesson plan.
3. Midterm test
- a. Midterm exam was held in the 8<sup>th</sup> meeting. Students was given about 100 minutes (plus 10 minutes extended time for online submission) to finish the exam.
  - b. The midterm exam was focus on measuring the ability to use python as integrated program in solving statistics problems.
  - c. There were some types of problem, such as short answer, true/false question, and essay.
4. Final test
- a. Final Exam was held in the 16<sup>th</sup> meeting. Students was also given the same completion time as midterm exam.
  - b. The final test was masuring the ability of using python to perform data analysis.
  - c. The problems' type are multiple choice and essay.

The calculation of CO and PLO for each student:

No.	No. Mhs	PPc1	PPa1	PPa2	Nilai Akhir
1	17611003	100.00	86.00	93.08	91.65
2	17611006	84.85	80.00	85.58	83.83
3	17611017	84.85	86.00	86.50	86.18
4	17611018	100.00	100.00	80.25	88.15
5	17611019	100.00	70.00	91.92	86.15
6	17611021	100.00	80.00	83.58	84.15
7	17611022	84.85	80.00	87.00	84.68
8	17611026	100.00	100.00	91.00	94.60
9	17611029	90.91	100.00	72.33	82.49
10	17611031	100.00	80.00	86.67	86.00
11	17611033	100.00	86.00	84.58	86.55
12	17611036	100.00	80.00	83.50	84.10
13	17611037	100.00	86.00	95.58	93.15
14	17611038	84.85	86.00	70.42	76.53
15	17611041	100.00	86.00	91.92	90.95
16	17611042	100.00	80.00	83.25	83.95
17	17611045	100.00	80.00	90.92	88.55
18	17611048	24.24	80.00	74.17	70.92
19	17611050	69.70	100.00	88.00	89.77
20	17611051	100.00	80.00	83.33	84.00
21	17611055	100.00	86.00	89.42	89.45
22	17611056	84.85	76.00	84.75	82.13
23	17611057	100.00	86.00	79.17	83.30
24	17611059	100.00	86.00	89.33	89.40

CALCULATION  
PROGRAM  
LEARNING  
OUTCOME

25	17611061	100.00	86.00	94.42	92.45
26	17611063	100.00	86.00	93.08	91.65
27	17611067	69.70	72.00	74.33	73.17
28	17611069	84.85	86.00	86.25	86.03
29	17611070	100.00	86.00	82.33	85.20
30	17611072	100.00	86.00	75.17	80.90
31	17611076	100.00	86.00	79.50	83.50
32	17611081	100.00	86.00	88.17	88.70
33	17611082	54.55	80.00	78.33	76.45
34	17611110	100.00	86.00	82.75	85.45
35	17611113	24.24	0.00	56.08	36.07
36	18611001	84.85	86.00	91.08	88.93
37	18611002	84.85	100.00	90.08	92.53
38	18611007	100.00	86.00	90.67	90.20
39	18611010	100.00	100.00	94.25	96.55
40	18611028	100.00	86.00	80.92	84.35
41	18611035	100.00	86.00	90.25	89.95
42	18611036	100.00	80.00	78.33	81.00
43	18611041	100.00	86.00	92.33	91.20
44	18611048	84.85	80.00	73.83	76.78
45	18611052	84.85	86.00	91.50	89.18
46	18611053	69.70	74.00	87.17	81.47
47	18611057	100.00	80.00	89.58	87.75
48	18611058	69.70	70.00	82.00	77.17
49	18611073	60.61	86.00	78.83	79.16
50	18611083	100.00	88.00	90.75	90.85
51	18611087	100.00	100.00	96.75	98.05
52	18611128	100.00	80.00	84.25	84.55
53	18611129	84.85	100.00	87.42	90.93
54	18611130	100.00	100.00	89.67	93.80
55	18611133	100.00	86.00	85.83	87.30
56	18611138	84.85	80.00	72.42	75.93
57	18611140	100.00	100.00	88.83	93.30
58	18611143	90.91	86.00	82.75	84.54
59	18611148	100.00	100.00	92.58	95.55
60	18611157	100.00	86.00	84.08	86.25

Achievement of PLO in Design of Experiment course Academic Year 2020/2021

Data Intelligence	E	N	T	H	U	S	I	A	S	T	I	C
CO 1											93.30	

CO 2												84.53	
CO 3												85.05	
<b>Achievement of PLO</b>												<b>85.46</b>	

By the category, here is the summarization table of CO achievement

Categories	Count of PPc1	Count of PPa1	Count of PPa2
Excellent	52	54	52
Good	4	5	7
Satisfy	1	-	1
Fail	3	1	-
Grand Total	60	60	60

#### PLO Assessment Rubric

PLO	Description	Excellent	Good	Satisfy	Fail
Technique	mastering the concepts of probability theory and statistics, mathematics, calculus, elementary linear algebra, statistical analysis methods, and the basic of computer programming with score at least 76.25	mastering the concepts of probability theory and statistics, mathematics, calculus, elementary linear algebra, statistical analysis methods, and the basic of computer programming with score more than 65 and less than 76.24	mastering the concepts of probability theory and statistics, mathematics, calculus, elementary linear algebra, statistical analysis methods, and the basic of computer programming with score more than 60 and less than 64.99	mastering the concepts of probability theory and statistics, mathematics, calculus, elementary linear algebra, statistical analysis methods, and the basic of computer programming with score at least 55.00 and less than 59.99	mastering the concepts of probability theory and statistics, mathematics, calculus, elementary linear algebra, statistical analysis methods, and the basic of computer programming with score less than 55.00.

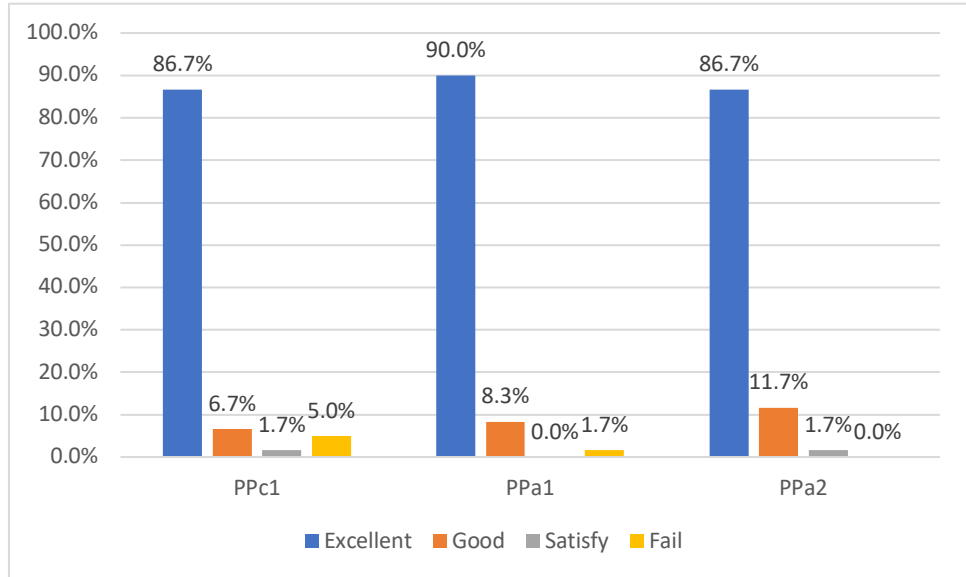
#### Achievement number of PLO

	Number of students	Percentage (%)
Excellent	56	93.33
Good	3	5.00
Satisfy	0	0.00

LEARNING  
OUTCOME  
ANALYSIS

Fail	1	1.67
Total	44	100.00

The percentage of each CO under categories.



STUDENT'S  
LEARNING  
PERFORMANCE  
ANALYSIS

There are 60 students enrolling this course. More than 80% students manage to achieve all the COs by excellent category. However, there are about 3 students got fail in CO1 and 1 student also got fail in CO3. Because of the high weight of CO3 to LO, this failure leads her/him having a poor final score. The historical score showed that he/she did not submit all the assignments. In general, based on the result, most students actually are able in utilizing an open-source software (python) to compile programming code served as data analysis solving.

RECOMMENDATI  
ON FOR FUTURE  
LEARNING

There is recommendation for better course in the future that is motivate students to be more active by following the learning materials in order to understand the concept of statistics by composing python programming code.

RECOMMENDATI  
ON FOR  
INSTITUTION

Recommendation for institution is by giving peers tutor to a student having trouble to follow a course.