	Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Biology Education Masters Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Laboratory Management	1234502015	Study Program Elective Courses	T=2	P=0	ECTS=4.48	3	April 28, 2023

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	Dr.Yuliani,M.Si	Dr.Yuliani,M.Si	Prof. Dr. Yuliani, M.Si.

Learning model	**Project Based Learning**	
Program Learning Outcomes (PLO)	**PLO study program that is charged to the course**	
	PLO-6	Able to show a responsible attitude towards work in their field of expertise by paying attention to academic ethics in carrying out their professional duties, and able to embody the character of faith, intelligence, independence, honesty, caring and toughness in daily behavior.
	Program Objectives (PO)	
	PO - 1	Master the theory of laboratory management and be able to apply it in the field of Biology and Biology learning through the use of science and technology.
	PO - 2	Master the theory of laboratory management and be able to apply it in the field of Biology and Biology learning through the use of science and technology.
	PO - 3	Able to compile ideas, thoughts and scientific arguments in the field of laboratory management and communicate them to the public
	PO - 4	Able to develop the concept of bioecoprneurship in laboratory management to support community welfare
	PO - 5	Have a responsible, independent, honest, tough attitude and pay attention to ethics in implementing laboratory management
	PLO-PO Matrix	

P.O	PLO-6
PO-1	
PO-2	
PO-3	
PO-4	
PO-5	

PO Matrix at the end of each learning stage (Sub-PO)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PO-1																
PO-2																
PO-3																
PO-4																
PO-5																

Short Course Description	This course examines laboratory management (human resources, laboratory organization, facilities, equipment, finance, administration, quality and work safety) along with the function as a manager in the laboratory and is able to implement it in the form of training. Laboratory management is carried out through discussions, presentations and practice in handling laboratory management accompanied by project assignments.	
References	**Main :**	

1. Reynolds M. Salerno, Jennifer Gaudioso. 2015. Laboratory Biorisk Management: Biosafety and Biosecurity.CRC Press In
2. Amien Mohammad. 1988. Buku Pedoman Laboratorium dan Petunjuk Praktikum Pendidikan IPA Umum (General Science) untuk Lembaga Pendidikan Tenaga Kependidikan. Jakarta: Proyek Pengembangan LPTK Dirjen Dikti Depdikbud RI.
3. Garcia, Lynne S.2019.Clinical laboratory Management.2nd edition.Amazon
4. Indrawan, irjus dkk.2020. Manajemen laboratorium Pendidikan.Pasuruan: Qiara Media
5. Tri Asri, Mahanani, Yuliani, Sunu Kuntjoro.2019. Dasar dasar Pengelolaan Laboratorium. Surabaya: Unesa University Press

Supporters:	

Supporting lecturer	Prof. Dr. Yuliani, M.Si. Dr. H. Sunu Kuntjoro, S.Si., M.Si.

Week-	**Final abilities of each learning stage (Sub-PO)**	**Evaluation**		**Help Learning, Learning methods, Student Assignments, [Estimated time]**		**Learning materials [References]**	**Assessment Weight (%)**
		Indicator	**Criteria & Form**	**Offline (*offline*)**	**Online (*online*)**		
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
1	Understand the meaning, function and role of laboratories	1.Describe the meaning and scope of a laboratory 2.Analyzing the function of laboratories for the educational process 3.Provide examples of the role of laboratories in learning or education	**Criteria:** Form: Written Test, Assignment and Project, with Criteria: Indicators achieved through assignments in independent, structured assignments and project assignments **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Discuss the meaning, function and scope of laboratories based on ppt and articles Visit the website to search for various types of laboratories in schools, properties or commercial laboratories		**Material:** Definition, Function and Role of the Laboratory **References:** *Reynolds M. Salerno, Jennifer Gaudioso. 2015. Laboratory Biorisk Management: Biosafety and Biosecurity.CRC Press In*	10%
2	Analyze the position and function of laboratory management	1.Analyzing the position of management in a laboratory 2.Identify the various parts of laboratory management 3.Summarizes various management functions in terms of planning, implementation and supervision	**Criteria:** Form: Written Test, Assignment and Project, with Criteria: Indicators achieved through assignments in independent, structured assignments and project assignments **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	• Discuss laboratory management • Visit the web to search for various management functions in terms of planning, implementation and supervision (2 x 50 minutes)		**Material:** Laboratory Management **References:** *Reynolds M. Salerno, Jennifer Gaudioso. 2015. Laboratory Biorisk Management: Biosafety and Biosecurity.CRC Press In*	10%
3			**Form of Assessment** : Project Results Assessment / Product Assessment				5%
4			**Form of Assessment** : Project Results Assessment / Product Assessment				5%
5			**Form of Assessment** : Project Results Assessment / Product Assessment				5%
6			**Form of Assessment** : Project Results Assessment / Product Assessment				0%
7			**Form of Assessment** : Project Results Assessment / Product Assessment				0%

8			**Form of Assessment** : Participatory Activities	UTS	UTS		15%
9			**Form of Assessment** : Project Results Assessment / Product Assessment				5%
10			**Form of Assessment** : Project Results Assessment / Product Assessment				5%
11			**Form of Assessment** : Project Results Assessment / Product Assessment				5%
12			**Form of Assessment** : Project Results Assessment / Product Assessment				5%
13			**Form of Assessment** : Project Results Assessment / Product Assessment				5%
14			**Form of Assessment** : Project Results Assessment / Product Assessment				0%
15			**Form of Assessment** : Project Results Assessment / Product Assessment				5%
16			**Form of Assessment** : Participatory Activities, Tests			**Material:** Materials 9 to 15 **References:** *Indrawan, Irjus et al. 2020. Education laboratory management. Pasuruan: Qiara Media*	20%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	35%
2.	Project Results Assessment / Product Assessment	55%
3.	Test	10%
		100%

Notes

1. **Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
2. **The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.

6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.