



Universitas Negeri Surabaya
Faculty of Mathematics and Natural Sciences
Biology Undergraduate Study Program

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date
Quality Control Management	4620102245	Compulsory Study Program Subjects	T=2 P=0 ECTS=3.18	7	July 19, 2023
AUTHORIZATION		SP Developer	Course Cluster Coordinator	Study Program Coordinator	
		Erlix Rakhmad Purnama, M.Si	Erlix Rakhmad Purnama, M.Si.	Dr. H. Sunu Kuntjoro, S.Si., M.Si.	

Learning model	Project Based Learning
-----------------------	-------------------------------

Program Learning Outcomes (PLO)	PLO study program which is charged to the course																																																																				
PLO-9	Able to work independently in the laboratory and develop relevant skills by applying bioethics and work safety																																																																				
PLO-15	Able to demonstrate the basic principles of software applications and instruments, standard analysis methods, and synthesis in biology																																																																				
Program Objectives (PO)																																																																					
PO - 1	Able to act as quality control/Research and Development to solve problems in the field of biology																																																																				
PO - 2	Mastering the principles of K3 (Work Safety and Security), laboratory management and the use of equipment, instruments, standard methods and software applications for analysis and modification in the field of biology																																																																				
PLO-PO Matrix																																																																					
	<table border="1" style="margin: auto;"> <tr> <td>P.O</td> <td>PLO-9</td> <td>PLO-15</td> </tr> <tr> <td>PO-1</td> <td></td> <td></td> </tr> <tr> <td>PO-2</td> <td></td> <td></td> </tr> </table>	P.O	PLO-9	PLO-15	PO-1			PO-2																																																													
P.O	PLO-9	PLO-15																																																																			
PO-1																																																																					
PO-2																																																																					
PO Matrix at the end of each learning stage (Sub-PO)																																																																					
	<table border="1" style="margin: auto;"> <tr> <td rowspan="2">P.O</td> <td colspan="16">Week</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td> </tr> <tr> <td>PO-1</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><td></td><td></td><td></td> </tr> <tr> <td>PO-2</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><td></td><td></td><td></td> </tr> </table>	P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	PO-1																	PO-2																	
P.O	Week																																																																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																																																					
PO-1																																																																					
PO-2																																																																					

Short Course Description	This course discusses the scope of quality control starting from the types of QC laboratories, inspection of raw materials, supervision of processing processes, and inspection of final product results, governance of QC laboratory space, management systems in QC laboratories, handling of materials and products that are out of specification, handling QC laboratory equipment, control of biological products or raw materials, control of air quality, water quality, soil quality, product development and laboratory SOPs, handling customer complaints, standardization and supervision of products and laboratories according to HACCP and ISO 17025, and K3 in the QC laboratory. This course is presented using presentation methods, discussions and group project work.
---------------------------------	---

References	<p>Main :</p> <ol style="list-style-type: none"> Hadi, A . 2007. Pemahaman dan Penerapan ISO/IEC 17025:2005: Persyaratan Umum dan Kompetensi Laboratorium Pengujian dan Laboratorium Kalibrasi . Jakarta: Gramedia Pustaka Utama. Mitra, A . 2008. Fundamentals of Quality Control and Improvement . Edisi Ketiga. New Jersey: John Wiley & Sons Inc. Suyanta . 2010. Manajemen Operasional Laboratorium . Yogyakarta: UNY. <p>Supporters:</p>
-------------------	---

Supporting lecturer	Prof. Dr. Yuliani, M.Si. Dr. H. Sunu Kuntjoro, S.Si., M.Si. Guntur Trimulyono, S.Si., M.Sc. Erlix Rakhmad Purnama, 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	Understanding the QC laboratory	<ul style="list-style-type: none"> · Explain the definition of the QC Lab · State the scope of QC work · Differentiate between QA and QC · State the function and role of the QC Lab 	<p>Criteria:</p> <ol style="list-style-type: none"> 1.Participation 20% 2.UTS 20% <p>Form of Assessment : Participatory Activities, Tests</p>	lectures and discussions 2 X 50 minutes	Lecture and Discussion Method 2 x 50 minutes	<p>Material: Introduction and Scope of QC</p> <p>References: <i>Mitra, A. 2008. Fundamentals of Quality Control and Improvement. Third Edition. New Jersey: John Wiley & Sons Inc.</i></p>	5%
2	Understand QC Lab management and SOPs	<ol style="list-style-type: none"> 1. Identify the QC Lab management structure 2. Identify the SOP used in the QC Lab 3. Explaining HACCP in the QC Lab 4. Mentions the implementation of ISO 17025 in the QC Lab 5. Explain the role of K3 in the QC Lab 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. Duty 30% 2. Participation 20% 3. UTS 20% <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Tests</p>	lectures and discussions 2 X 50 minutes	lectures and discussions 2 X 50 minutes	<p>Material: Management System, ISO 17025, HACCP, and K3 QC Lab</p> <p>Reference: <i>Hadi, A. 2007. Understanding and Application of ISO/IEC 17025:2005: General Requirements and Competence of Testing Laboratories and Calibration Laboratories. Jakarta: Gramedia Pustaka Utama.</i></p>	5%
3	Analyze raw material inspection	<ol style="list-style-type: none"> 1. Analyze the types of raw materials 2. Identify procedures for receiving raw materials 3. Identify raw material analysis processes according to SOP 4. Identify raw material analysis processes according to SOP 5. Describe the criteria for raw materials to be accepted according to specifications 6. Identifying raw material groupings for the storage process in the warehouse 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. assignment 30% 2. participation 20% 3. UTS 20% <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Tests</p>	lectures and discussions 2 X 50 minutes	lectures and discussions 2 x 50 minutes	<p>Material: Examination of raw materials</p> <p>References: <i>Mitra, A. 2008. Fundamentals of Quality Control and Improvement. Third Edition. New Jersey: John Wiley & Sons Inc.</i></p>	5%
4	Understand the handling of equipment and chemicals in the QC Lab	<ol style="list-style-type: none"> 1. Mention appropriate QC Lab equipment 2. Explain the basic functions and how to operate QC Lab equipment 3. Explain the placement of chemicals in the QC lab 4. Distinguish between storage of liquid and solid chemicals 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. assignment 30% 2. participation 20% 3. UTS 20% <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	lectures and discussions 2 X 50 minutes	lectures and discussions 2 x 50 minutes	<p>Material: Handling Tools and Chemicals</p> <p>Reference: <i>Suyanta . 2010. Laboratory Operations Management. Yogyakarta: UNY.</i></p>	5%

5	Understand the development of a product	<ol style="list-style-type: none"> 1.Explain the objectives of developing a product. Identify the analysis used for the product being developed 2.SWOT analysis of old products and developed products 	Criteria: 1.UTS 20% 2.Duty 30% 3.Participation 20% Form of Assessment : Participatory Activities, Tests	lectures and discussions 2 X 50 minutes	Lectures and Discussions 2 x 50 minutes	Material: New Product Development Reference: <i>Mitra, A. 2008. Fundamentals of Quality Control and Improvement. Third Edition. New Jersey: John Wiley & Sons Inc.</i>	5%
6	Understand the control of biological products and raw materials	<ol style="list-style-type: none"> 1.Explain the importance of control over biological products 2.Explain the importance of control over biological raw materials 3.Identify analyzes for control of biological products during storage 4.Identify analyzes for control of biological raw materials during storage 5.Explain the importance of control over air, water and land 	Criteria: 1.UTS 20% 2.Duty 30% Form of Assessment : Participatory Activities, Tests	lectures and discussions 2 X 50 minutes	lectures and discussions 2 x 50 minutes	Material: Control of Biological Materials/Products and Quality of Water, Air, Soil Reference: <i>Suyanta . 2010. Laboratory Operations Management. Yogyakarta: UNY.</i>	5%
7	<ol style="list-style-type: none"> 1.Understand QC Lab governance 2.Explain handling customer complaints 	<ol style="list-style-type: none"> 1.Designing a good QC Lab design 2.Identifying locations for placing QC Lab equipment according to Lab ergonomics 3.Identify customer complaint criteria 4.Analyze how to handle and resolve customer complaints 	Criteria: 1.UTS 20% 2.Duty 30% 3.Participation 20% Form of Assessment : Project Results Assessment / Product Assessment	lectures and discussions 2 X 50 minutes	lectures and discussions 2 X 50 minutes	Material: QC Lab Governance and Handling Customer Complaints References: <i>Hadi, A. 2007. Understanding and Application of ISO/IEC 17025:2005: General Requirements and Competence of Testing Laboratories and Calibration Laboratories. Jakarta: Gramedia Pustaka Utama.</i>	5%
8	UTS		Form of Assessment : Test	Essay assignment 2 X 50 minutes	Essay assignment 2 x 50 minutes	Material: Meeting material 1-7 References: <i>Mitra, A. 2008. Fundamentals of Quality Control and Improvement. Third Edition. New Jersey: John Wiley & Sons Inc.</i>	10%

9	Understand the standardization of methods, analysts and equipment in the QC lab	<ol style="list-style-type: none"> 1.Explain the purpose of standardization 2.Identify things that need to be standardized in the QC Lab 3.Analyze ways to standardize activities in testing SOPs 4.Identifying QC Lab personnel quality standards with Ring Test 5.Analyzing equipment standardization in the QC Lab 	<p>Criteria:</p> <ol style="list-style-type: none"> 1.UAS 30% 2.Duty 20% 3.Participation 20% <p>Form of Assessment : Project Results Assessment / Product Assessment, Test</p>	lectures and discussions 2 X 50 minutes	lectures and discussions 2 x 50 minutes	<p>Material: Standardization of methods, analysis and equipment. References: Hadi, A. 2007. <i>Understanding and Application of ISO/IEC 17025:2005: General Requirements and Competence of Testing Laboratories and Calibration Laboratories.</i> Jakarta: Gramedia Pustaka Utama.</p>	10%
10	<ol style="list-style-type: none"> 1.Final Product Supervision 2.Management of Product Out of Specification 	<ol style="list-style-type: none"> 1.Explain the Final Product Monitoring process 2.Explain the process of Managing Out of Specification Products 	<p>Criteria:</p> <ol style="list-style-type: none"> 1.UAS 30% 2.Duty 30% 3.Participation 20% <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Lectures and Discussions 2 X 50		<p>Material: Final Product Monitoring References: Mitra, A . 2008. <i>Fundamentals of Quality Control and Improvement. Third Edition.</i> New Jersey: John Wiley & Sons Inc.</p>	5%
11	Understand the latest developments in the QC Lab	Able to explain the latest developments from the QC Lab	<p>Criteria:</p> <ol style="list-style-type: none"> 1.Participation 20% 2.UAS 30% <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Tests</p>	QC Practitioner Guest Lecture 2 X 50		<p>Material: - References: Hadi, A. 2007. <i>Understanding and Application of ISO/IEC 17025:2005: General Requirements and Competence of Testing Laboratories and Calibration Laboratories.</i> Jakarta: Gramedia Pustaka Utama.</p>	5%
12	Completed the creation of the QC Lab proposal	Prepare QC Lab proposals in groups	<p>Criteria:</p> <ol style="list-style-type: none"> 1.50% Participation Activities 2.Project Results Assessment 25% <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Practices / Performance</p>	Students work on project-based learning by preparing a proposal for creating a QC Lab whose contents consist of Company Name, QC Lab Organizational Structure, SOP, HACCP, K3. 2 X 50		<p>Material: - References: Hadi, A. 2007. <i>Understanding and Application of ISO/IEC 17025:2005: General Requirements and Competence of Testing Laboratories and Calibration Laboratories.</i> Jakarta: Gramedia Pustaka Utama.</p>	6%
13	Completed the creation of the QC Lab proposal	Prepare QC Lab proposals in groups	<p>Criteria:</p> <ol style="list-style-type: none"> 1.50% Participation Activities 2.Project Results Assessment 25% <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Practices / Performance</p>	Students work on project-based learning by preparing a proposal for creating a QC Lab whose contents consist of Company Name, QC Lab Organizational Structure, SOP, HACCP, K3. 2 X 50		<p>Material: - Bibliography: Mitra, A. 2008. <i>Fundamentals of Quality Control and Improvement. Third Edition.</i> New Jersey: John Wiley & Sons Inc.</p>	8%

14	Completed the creation of the QC Lab proposal	Prepare QC Lab proposals in groups	Criteria: 1.50% Participation Activities 2.Project Results Assessment 25% Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Practices / Performance	Students work on project-based learning by preparing a proposal for creating a QC Lab whose contents consist of Company Name, QC Lab Organizational Structure, SOP, HACCP, K3. 2 X 50		Material: - Library: Suyanta . 2010. <i>Laboratory Operations Management</i> . Yogyakarta: UNY.	10%
15	Understand the results of industrial visit activities	· Explain the results of industrial visit activities verbally and in writing	Criteria: 1.Duty 30% 2.Participation 20% Form of Assessment : Participatory Activities	Presentation and Activity Reporting 2 X 50		Material: - References: Hadi, A. 2007. <i>Understanding and Application of ISO/IEC 17025:2005: General Requirements and Competence of Testing Laboratories and Calibration Laboratories</i> . Jakarta: Gramedia Pustaka Utama.	10%
16	Understand the results of industrial visit activities	· Explain the results of industrial visit activities verbally and in writing	Criteria: 1.Duty 30% 2.Participation 20%	Presentation and Activity Reporting 2 X 50		Material: - References: Hadi, A. 2007. <i>Understanding and Application of ISO/IEC 17025:2005: General Requirements and Competence of Testing Laboratories and Calibration Laboratories</i> . Jakarta: Gramedia Pustaka Utama.	10%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	35.51%
2.	Project Results Assessment / Product Assessment	28.01%
3.	Practice / Performance	8%
4.	Test	27.51%
		99.03%

Notes

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Forms of assessment:** test and non-test.
- 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.
- 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.
- Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- 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%.
- TM=Face to face, PT=Structured assignments, BM=Independent study.

