



**Universitas Negeri Surabaya  
Faculty of Vocational Studies  
D4 Culinary Management Study Program**

Document Code

**SEMESTER LEARNING PLAN**

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Food Technology	6230503087	Expertise and Scientific Courses	T=3	P=0	ECTS=4.77	3	July 17, 2024
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator	
	Lilis Sulandari, S.Pt., M.P.		.....			Lilis Sulandari, S.Pt., M.P.	

Learning model	Case Studies
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Program Learning Outcomes (PLO)	<b>PLO study program which is charged to the course</b>																																																		
	PLO-5	Able to work together, have social sensitivity and concern for the environment as well as a professional personality																																																	
	PLO-9	Able to design, plan, make, present and store food, drink or cooking products in accordance with applicable recipe standards, product quality standards, food hygiene standards, meet aesthetic values by implementing K3 in the work environment																																																	
	PLO-13	Master in-depth theoretical concepts regarding the science and techniques of processing various foods/cuisine by applying food hygiene, Occupational Safety and Health (K3) to produce innovative, nutritious, safe and aesthetic products.																																																	
	<b>Program Objectives (PO)</b>																																																		
	PO - 1	Demonstrate a responsible attitude towards work in material handling, preservation and/or food processing																																																	
	<b>PLO-PO Matrix</b>																																																		
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>P.O</td> <td>PLO-5</td> <td>PLO-9</td> <td>PLO-13</td> </tr> <tr> <td>PO-1</td> <td></td> <td></td> <td></td> </tr> </table>	P.O	PLO-5	PLO-9	PLO-13	PO-1																																												
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	PO-1																																																		
<b>PO Matrix at the end of each learning stage (Sub-PO)</b>																																																			
	<table border="1" style="margin-left: auto; margin-right: 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> </table>	P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	PO-1																
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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																																			
PO-1																																																			

Short Course Description	Mastery of basic concepts and application of various techniques for handling, processing, preserving and storing foodstuffs including: food damage and appropriate control methods, temperature regulation, preservation with salt, sugar and acid, drying, smoking, irradiation, food enzymes, food additives, food packaging & Edible coating, as well as sensory/organoleptic methods.
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References	<b>Main :</b>	<ol style="list-style-type: none"> <li>Desrosier, W. 1988. Teknologi Pengawetan Pangan. UI Press Jakarta.</li> <li>Mountney, GJ and W. A. Gould. 1988. Practical Food Microbiology and Technology Third Edition. Van Nostrand Reinhold Company New York.</li> <li>Purnomo, H. 1995. Ilmu Pangan (Terjemahan). UI Press Jakarta.</li> <li>Purnomo, H. 1996. Dasar-dasar Pengolahan dan Pengawetan Daging. Gramedia Widiasarana Indonesia Jakarta.</li> <li>Winarno, F. G. 1987. Enzim Pangan. Gramedia Jakarta.</li> <li>Winarno, F. G. 1987. Pengantar Teknologi Pangan. Gramedia Jakarta.</li> <li>Winarno, F. G. 1997. Kimia Pangan dan Gizi. Gramedia Jakarta.</li> <li>Cahyadi, W. 2006. Analisis dan aspek Kesehatan Bahan Tambahan Pangan. PT Bumi Aksara Jakarta.</li> <li>Potter, N.N. 1995. Food Science. Chapman &amp; Hall. New York.</li> <li>Soekarto, S., T. 1985. Penilaian Organoleptik. Bhratara Karya Aksara. Jakarta.</li> </ol>
	<b>Supporters:</b>	<ol style="list-style-type: none"> <li>PerBPOM_No_11_Tahun_2019_tentang_BTP PP No. 28 Tahun 2004 tentang Keamanan, Mutu dan Gizi Pangan</li> <li>PMK-No.-033-ttg-Bahan-Tambahan-Pangan</li> </ol>
	<b>Supporting lecturer</b>	Dr. Ir. Asrul Bahar, M.Pd. Lilis Sulandari, S.Pt., M.P.

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		<p>1.Accuracy in explaining the meaning of food technology</p> <p>2.Accuracy in explaining the goals of food technology</p> <p>3.Accuracy in explaining the benefits of food technology</p> <p>4.Accuracy in explaining the scope of food technology</p>	<p><b>Form of Assessment :</b> Test</p>	<p>Lecture, discussion of the meaning and role of food technology in life 3 x 50 minutes</p>	<p>Synchronous meaning and role of food technology in life 3 x 50 minutes</p>	<p><b>Material:</b> Meaning of Food Technology <b>Reference:</b> Desrosier, W. 1988. <i>Food Preservation Technology</i>. UI Press Jakarta.</p> <hr/> <p><b>Material:</b> Meaning of Food Technology <b>Reference:</b> Purnomo, H. 1995. <i>Food Science (Translation)</i>. UI Press Jakarta.</p>	0%
2		<p>1.Accuracy in explaining the properties of food ingredients</p> <p>2.Accuracy in explaining the factors that cause food damage</p> <p>3.Accuracy in distinguishing types of food damage</p> <p>4.Accuracy in determining how to control food ingredients</p>	<p><b>Form of Assessment :</b> Participatory Activities</p>	<p>Lecture, discussion, preparation of LKM 3 x 50 minutes</p>	<p>Lecture, question and answer, LKM preparation assignment 3 x 50 minutes</p>	<p><b>Material:</b> Food preservation techniques <b>Reference:</b> Desrosier, W. 1988. <i>Food Preservation Technology</i>. UI Press Jakarta.</p> <hr/> <p><b>Material:</b> Food damage by microorganisms <b>References:</b> Mounthney, GJ and WA Gould. 1988. <i>Practical Food Microbiology and Technology Third Edition</i>. Van Nostrand Reinhold Company New York.</p> <hr/> <p><b>Material:</b> Types of food spoilage and their control. <b>Reference:</b> Purnomo, H. 1995. <i>Food Science (Translation)</i>. UI Press Jakarta.</p> <hr/> <p><b>Material:</b> Properties and components of food. <b>Reference:</b> Winarno, FG 1997. <i>Food Chemistry and Nutrition</i>. Gramedia Jakarta.</p>	0%
3		<p>Identify the properties of materials</p>	<p><b>Criteria:</b> Oral test assessment rubric (presentation) • Performance assessment rubric (practicum)</p> <p><b>Form of Assessment :</b> Participatory Activities, Practical Assessment</p>	<p>Practical 1 (Food damage and its control) 3 x 50 minutes</p>	<p>Presentation of practical results 1 3 x 50 minutes</p>	<p><b>Material:</b> Properties and components of food. <b>Reference:</b> Winarno, FG 1997. <i>Food Chemistry and Nutrition</i>. Gramedia Jakarta.</p> <hr/> <p><b>Material:</b> Food spoilage control techniques <b>Reference:</b> Desrosier, W. 1988. <i>Food Preservation Technology</i>. UI Press Jakarta.</p> <hr/> <p><b>Material:</b> Causes of food spoilage and how to control it <b>Reference:</b> Purnomo, H. 1995. <i>Food Science (Translation)</i>. UI Press Jakarta.</p>	0%
4	<p>able to explain the principles of preservation by temperature regulation</p>	<p>1.Precision explains the purpose of low temperature preservation</p> <p>2.Accuracy in explaining various low temperature preservation methods</p> <p>3.Precision explains the purpose of high temperature preservation</p> <p>4.Accuracy in explaining various methods of high temperature preservation</p>	<p><b>Form of Assessment :</b> Participatory Activities, Practical Assessment</p>	<p>Lecture, practicum 2 (High temperature preservation) 3 x 50 minutes</p>	<p>Synchronous, presentation of practical results 2 (High temperature preservation) 3 x 50 minutes</p>	<p><b>Material:</b> Preservation by controlling temperature <b>References:</b> Desrosier, W. 1988. <i>Food Preservation Technology</i>. UI Press Jakarta.</p> <hr/> <p><b>Material:</b> Types of food preservation <b>Reference:</b> Purnomo, H. 1995. <i>Food Science (Translation)</i>. UI Press Jakarta.</p> <hr/> <p><b>Material:</b> Food preservation techniques <b>Reference:</b> Winarno, FG 1987. <i>Introduction to Food Technology</i>. Gramedia Jakarta.</p>	5%
5		<p>1.Accurately explains the principles of salt, sugar and acid preservation</p> <p>2.Accurately explains the product and how to preserve it with salt, sugar and acid</p>	<p><b>Form of Assessment :</b> Participatory Activities, Practical Assessment</p>	<p>Practical Lecture 3: preservation with salt, sugar and acid Project Based Learning (PjBL), classical discussion 3 x 50 minutes</p>	<p>Synchronous, lecture Presentation of practical results 3 3 x 50 minutes</p>	<p><b>Material:</b> Preservation with sugar and acid <b>References:</b> Desrosier, W. 1988. <i>Food Preservation Technology</i>. UI Press Jakarta.</p> <hr/> <p><b>Material:</b> Jam and jelly products <b>Reference:</b> Purnomo, H. 1995. <i>Food Science (Translation)</i>. UI Press Jakarta.</p>	0%

6		<ol style="list-style-type: none"> <li>1.Accuracy explains the principle of preservation by drying</li> <li>2.Accuracy explains the various drying methods, their advantages and disadvantages</li> <li>3.Accuracy explains how some types of dryers work</li> <li>4.Accuracy of applying drying techniques in making food products</li> </ol>	<b>Criteria:</b> Performance assessment rubric (practicum 4)  <b>Form of Assessment :</b> Practical Assessment	Practical Lecture 4: preservation by drying Project Based Learning (PjBL), classical discussion 3 x 50 minutes	Synchronous, Lecture Presentation of Practical 4 results: preservation by drying 3 x 50 minutes	<b>Material:</b> Food preservation techniques <b>Reference:</b> <i>Desrosier, W. 1988. Food Preservation Technology. UI Press Jakarta.</i>  <b>Material:</b> Drying products <b>References:</b> <i>Purnomo, H. 1996. Basics of Meat Processing and Preservation. Gramedia Widiasarana Indonesia Jakarta.</i>  <b>Material:</b> Food Dehydration and Concentration <b>Reference:</b> <i>Potter, NN 1995. Food Science. Chapman &amp; Hall. New York.</i>	10%
7		<ol style="list-style-type: none"> <li>1.1. Accurately explains the principle of preservation by drying;</li> <li>2.2. Accuracy in explaining the various drying methods, their advantages and disadvantages;</li> <li>3.3. Accurately explains how several types of dryers work</li> <li>4.4. Accuracy in applying drying techniques in making food products</li> </ol>	<b>Criteria:</b> Performance assessment rubric (practicum)  <b>Form of Assessment :</b> Practical Assessment	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Practical 4: preservation by drying 3 x 50 minutes</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Practical 4: preservation by drying 3 x 50 minutes</li> </ul>		10%
8			<b>Form of Assessment :</b> Test	Offline UTS test	Synchronous UTS test		0%
9	Able to make food products by applying the principles of preservation by smoking	<ol style="list-style-type: none"> <li>1.1. Accurately explain the meaning, advantages and disadvantages of fumigation techniques</li> <li>2.2. Accuracy in explaining the potential of fumigation in preserving food</li> <li>3.3. Accuracy in explaining various fumigation techniques</li> <li>4.4. Accuracy in applying smoking techniques in making food products</li> </ol>	<b>Criteria:</b> Performance assessment rubric (practicum)  <b>Form of Assessment :</b> Practical Assessment	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Practical 5: pickling by smoking 3 x 50 minutes</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Practical 5: pickling by smoking 3 x 50 minutes</li> </ul>	<b>Material:</b> Food preservation techniques <b>Reference:</b> <i>Desrosier, W. 1988. Food Preservation Technology. UI Press Jakarta.</i>	0%
10		<ol style="list-style-type: none"> <li>1.Accuracy in explaining the meaning, organisms that play a role and factors that influence fermentation</li> <li>2.Accuracy in explaining various fermentation products</li> <li>3.Accurately explains how to make fermented products</li> <li>4.Accuracy of making fermented products</li> </ol>	<b>Criteria:</b> Performance assessment rubric (practicum)  <b>Form of Assessment :</b> Practical Assessment	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Practical 6: preservation by fermentation</li> </ul>	Synchronous, asynchronous	<b>Material:</b> Fermentation <b>References:</b> <i>Desrosier, W. 1988. Food Preservation Technology. UI Press Jakarta.</i>	10%

11	Able to explain the principles of preservation with light (Irradiation)	<p>1.1. Accuracy in explaining the terms irradiation, irradiation units and irradiation sources</p> <p>2.2. Accuracy in explaining the advantages and disadvantages of irradiation techniques</p> <p>3.3. Accuracy in explaining the principle of preservation by irradiation</p>	<p><b>Form of Assessment :</b> Participatory Activities</p>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Classical discussion</li> <li>• Assignment: Give 3 examples of food products with irradiation logo labels 3 x 50 minutes</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Classical discussion</li> <li>• Assignment: Give 3 examples of food products with irradiation logo labels 3 x 50 minutes</li> </ul>	<p><b>Material:</b> Food preservation techniques <b>Reference:</b> Desrosier, W. 1988. <i>Food Preservation Technology</i>. UI Press Jakarta.</p>	5%
12	Able to explain the use of food additives	<p>1.1. Accurately explain the meaning of food additive.</p> <p>2.2. Explain the requirements for food additives</p> <p>3.3. Accuracy in explaining the types and functions of food additives</p> <p>4.4. Accuracy in giving examples and limits on the use of food additives</p>	<p><b>Criteria:</b> Written test assessment rubric</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Classical discussion</li> <li>• Assignment: Identify and explain the functions and limitations of using food additives</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Classical discussion</li> <li>• Assignment: Identify and explain the functions and limitations of using food additives</li> </ul>	<p><b>Material:</b> Food Additives <b>Reference:</b> Cahyadi, W. 2006. <i>Analysis and Health aspects of Food Additives</i>. PT Bumi Aksara Jakarta.</p>	0%
13		<p>1.1. Accuracy in explaining the meaning and function of packaging 4. Accuracy in explaining how to determine the expiration date</p> <p>2.2. Accuracy in explaining the types of packaging activities</p> <p>3.3. Accuracy in explaining classification, form and type of packaging</p>	<p><b>Criteria:</b> Criteria: Written test assessment rubric</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Classical discussion</li> <li>• Assignment: outline regulations regarding food packaging and expiration limits 3 x 50 minutes</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Classical discussion</li> <li>• Assignment: outline regulations regarding food packaging and expiration limits 3 x 50 minutes</li> </ul>	<p><b>Material:</b> Food Packaging <b>Library:</b> <i>PerBPOM_No_11_Year_2019_about_BTP PP No. 28 of 2004 concerning Food Safety, Quality and Nutrition</i></p>	0%
14		<p>1.1. Accuracy in explaining the meaning, nature and origin of enzymes</p> <p>2.2. Accuracy in explaining factors that influence enzyme activity</p> <p>3.3. Accuracy in providing examples of the benefits of enzymes in the food sector</p> <p>4.4. Apply the function of enzymes to the food system</p>	<p><b>Criteria:</b> Performance assessment rubric (practicum)</p> <p><b>Form of Assessment :</b> Practical Assessment</p>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Practical 7: food enzymes (meat tenderization) 3x50 minutes</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Practical 7: food enzymes (meat tenderization) 3x50 minutes</li> </ul>	<p><b>Material:</b> Use of Enzymes in the Food Industry <b>Reference:</b> Winarno, FG 1987. <i>Food Enzymes</i>. Gramedia Jakarta.</p>	5%

15	Able to compile organoleptic test sheets, calculate and interpret organoleptic test data	1.1. Accuracy in explaining the principles and types of organoleptic tests 2.2. Accuracy of explaining the organization in organoleptic tests 3.3. Accuracy in making organoleptic test sheets 4.4. Accuracy in calculating organoleptic test data 5.5. Accuracy of interpreting organoleptic test result data	<b>Form of Assessment :</b> Practical Assessment	• Lectures • Project Based Learning (PjBL), 3 x 50 minute classical discussions	• Lectures • Project Based Learning (PjBL), 3 x 50 minute classical discussions	<b>Material:</b> Organoleptic Testing Methods <b>References:</b> Soekarto, S., T. 1985. <i>Organoleptic Assessment</i> . Bhratara Karya Aksara. Jakarta.	10%
16		Accuracy in answering food technology questions	<b>Form of Assessment :</b> Test	Written ability test regarding food technology 2 x 50 minutes	Written ability test regarding food technology 2 x 50 minutes	<b>Material:</b> Food preservation techniques <b>Reference:</b> Desrosier, W. 1988. <i>Food Preservation Technology</i> . UI Press Jakarta.  <b>Material:</b> Organoleptic tests <b>References:</b> Soekarto, S., T. 1985. <i>Organoleptic assessment</i> . Bhratara Karya Aksara. Jakarta.	5%

#### Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	7.5%
2.	Practical Assessment	47.5%
3.	Test	5%
		60%

#### 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.