

**SEMESTER LESSON PLAN (RPS)**

**(APPLIED SCIENCE IN CULINARY)**



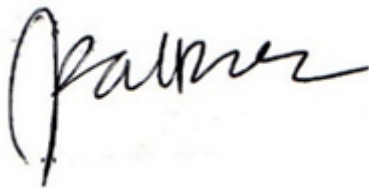



**Lecturer:**

**Dr. AI MAHMUDATUSSA'ADAH, M.Si.**

**CULINARY EDUCATION STUDY PROGRAM  
DEPARTMENT OF FAMILY WELFARE EDUCATION  
FACULTY OF TECHNOLOGY AND VOCATIONAL EDUCATION  
UNIVERSITAS PENDIDIKAN INDONESIA  
2021**

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	<b>SEMESTER LESSON PLAN (RPS)</b>	Revision : 01
	<b>BG 106 APPLIED SCIENCE IN CULINARY</b>	Date : 28 October 2021 Page : 14 pages
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<b>SEMESTER LESSON PLAN (RPS)</b>		
<b>1. Course Identity</b>		
Name of Study Program : Culinary Education Name of Course : Applied Science in Culinary Code of Course : BG 106 Group of Course : Study Program Expertise Course (MKKIPS) SKS weight : 2 Level : S-1 Semester : Odd Prerequisite : - Status (mandatory/optional) : Mandatory Lecturer name and code : Ai Mahmudatussa'adah (2412)		

## **2. Course Description (1 paragraph)**

This course is a Study Program Expertise Course (MKKIPS) with a 2 credits weight. The learning outcomes of this course is that students can apply applied-natural science principles in culinary area. This course learns: Quantity and Measuring Tool: Mass, Temperature, Volume, Pressure, Unit Conversion, Heat Transfer and Heat Transfer Media, Effect of Processing on chemical components of food (Water, Carbohydrates, Proteins, Fats, Vitamins, Minerals, Dyes (Phytochemicals), Role of Food Additives, Microbiological Applications in the field of food (Fermentation), the relationship of microorganisms to food spoilage, Biochemistry of Food Metabolism, Molecular Culinary, applied-natural science in pastries, catering services, and diets. Lectures are taught using *problem based learning* models, expository methods, discussions, questions and answers, with a scientific approach through SPOT, Google Classroom, and Whats UP groups either directly or indirectly (*asynchronous*). At least 80% of attendance Evaluation is done through UTS, UAS, and structured assignments.

## **3. Outcomes of Referenced Study Program Learning (RSPL)**

S Demonstrate scientific, educative, and religious attitudes and behaviors contributing to improving the quality of life in society, nation, and state, based on academic norms and ethics;

P3 Proficient in theoretical concepts of Culinary education

KU Can apply logical, critical, systematic, and innovative thinking in the context of science and technology development or implementation that pays attention to and applies humanities values corresponding to their area of expertise;

KK4 Can create innovation and creativity of culinary products

## **4. Course Learning Outcomes (CLO)**

M1 Analyze the principles of applied-natural science in culinary arts area

M2 Analyze the unit concept

M3 Analyze the concept of unit conversion

M4 Analyze the concept of Heat Transfer,

M5 Analyze the Effect of Processing on the chemical components of food

M6 Analyze the Role of Physics and Chemistry in the manufacture and development of food, molecular culinary

M7 Analyze the application concept of microbiology in the field of food (Fermentation)

M8 Analyze the microbiological relationship with food spoilage

### 5. Description of Learning Plan

Meeting	Indicators of Course Learning Outcomes	Study Modules	Learning Format	Duration (Minute)	Assignment and Evaluation	References
1	<p><b>Sub-CLO</b></p> <p>1. Students can explain the rules of Applied Natural Science lectures</p> <p>2. Students can analyze the application of natural science in culinary arts area</p>	Overview of Applied Natural Science Lectures	Online via SPOT or zoom meeting or Google Classroom with problem-based learning model, question and answer method	100'	Oral quiz at the end of the meeting	1,2,3,4,5,6,7
2	<p>Sub-CLO</p> <p>Analyze Quantities and Measuring Tools</p> <p>Sub-CLO indicators:</p> <p>Students can:</p> <p>1. Analyze Mass, Temperature, Volume, and</p>	Quantity and Measuring Tools: Mass, Temperature, Volume, Pressure, Conversion of quantities, and	Online via SPOT or Google Classroom with discovery model, question and answer method	100'	Quiz at the end of the meeting	<b>1,2,3,4,5,6,7</b>

	Pressure, Conversion of quantities 2. Evaluate the application of measuring tools	measuring tools				
3	Sub-CLO Heat Transfer Sub-CLO indicators: Students can: 1. Analyze indicators of Heat, calories, Type of Heat Transfer, 2. Analyze the factors that affect heat transfer <b>3. Analyze the Heat Transfer Equipment</b> 4. Evaluate the heat transfer process in a food handling process	Heat Transfer: Heat, calories, Types of Heat Transfer, and Heat Transfer Equipment	Online via SPOT or zoom meet or Google Classroom with discovery model, question and answer method	100'	Quiz at the end of the meeting	1,2,3,4,5,6,7
4	Sub-CLO Analyze Materials and Its Changes Sub-CLO indicators: Students can: 1. Analyze Material Characteristics 2. Analyze the factors that affect Material Change	Material and Changes: Elements, Molecules, Compounds, Mixtures, Physical Changes, and	Online via SPOT or Google Classroom with discovery model, question and answer method	100'	Quiz at the end of the meeting	1,2,3,4,5,6,7

	<p>3. Distinguish Elements, Molecules, Compounds, and Mixtures</p> <p>4. Analyze Physical Changes</p> <p>5. Analyze Chemical Changes</p> <p>6. Analyze Physical and Chemical Reactions</p>	Chemical Changes				
5	<p>Sub-CLO</p> <p>Analyze the Effect of Processing on Carbohydrates in Foodstuffs</p> <p>Sub-CLO indicators:</p> <p>Students can:</p> <ol style="list-style-type: none"> <li>1. Explain the concept of processing carbohydrate sources of food</li> <li>2. <b>Analyze the types of carbohydrates in food</b></li> <li>3. Evaluate the effect of processing on carbohydrates</li> </ol>	The Effect of Processing on Carbohydrates in Foodstuffs	Online via SPOT or zoom meet or Google Classroom with discovery model, question and answer method	100'	Quiz at the end of the meeting	<b>1,2,3,4,5,6,7</b>
6	<p>Sub-CLO</p> <p>Analyze the Effect of Processing on Protein Foodstuffs</p> <p>Sub-CLO indicators:</p> <p>Students can:</p>	The Effect of Processing on Protein in Foodstuffs	Online via SPOT or Google Classroom with discovery model, question and answer method	100'	Quiz at the end of the meeting	<b>1,2,3,4,5,6,7</b>

	<ol style="list-style-type: none"> <li>1. Explain the concept of processing food sources of protein</li> <li><b>2. Analyze the type of protein in food</b></li> <li>3. Evaluate the effect of processing on protein</li> </ol>					
7	<p>Sub-CLO Analyze the Effect of Processing on Fats in Foodstuffs Sub-CLO indicators: Students can:</p> <ol style="list-style-type: none"> <li>1. Explain the concept of processing food sources of fat</li> <li><b>2. Analyze the type of fat in food</b></li> <li>3. Evaluate the effect of processing on fat</li> </ol>	The Effect of Processing on Fats in Foodstuffs	Online via SPOT or zoom meet or Google Classroom with discovery model, question and answer method	100'	Quiz at the end of the meeting	<b>1,2,3,4,5,6,7,8,9,10,11</b>
8	<p>Sub-CLO Analyze the Effect of Processing on Vitamins, Minerals, and Phytochemicals in Foodstuffs Sub-CLO indicators:</p>	Effect of processing on Vitamins, Minerals, and	Online via SPOT or zoom meet or Google Classroom with discovery model, question and answer method	100'	Quiz at the end of the meeting	<b>1,2,3,4,5,6,7,8,9</b>

	<p>Students can:</p> <ol style="list-style-type: none"> <li>1. Explain the concept of processing food sources of Vitamins, Minerals, and Phytochemical substances</li> <li>2. <b>Analyze the types of Vitamins, Minerals, and Phytochemical substances in food</b></li> <li>3. Evaluate the effect of processing on Vitamins, Minerals and Phytochemicals</li> </ol>	Phytochemicals				
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10	<p>Sub-CLO</p> <p>Analyze the role of Food Additives in Food Processing</p> <p>Sub-CLO indicators: After completing this course, students are expected to be able to:</p> <ol style="list-style-type: none"> <li>1. Analyze the concept of food additives</li> <li>2. Analyze the types of food additives</li> </ol>	The Role of Food Additives in Food Processing	Online via SPOT or Google Classroom with discovery model, question and answer method	100'	Quiz at the end of the meeting	<b>1,2,3,4,5,6,7,8,9</b>



	3. Analyze the function of food additives in food processing					
11	<p>Sub-CLO</p> <p>Sub-CLO indicators: Analyze Molecular Culinary Arts in culinary area</p> <p>After completing this course, students are expected to be able to:</p> <ol style="list-style-type: none"> <li>1. Analyze the principles of Molecular Culinary Arts in culinary area</li> <li>2. Analyze Molecular Culinary Arts products in culinary area</li> <li>3. Evaluate culinary products resulting from the development of molecular culinary arts</li> </ol>	Molecular Culinary Arts in culinary area	Online via SPOT or zoom meet or Google Classroom with discovery model, question and answer method	100'	Article Analysis	<b>1,2,3,4,5,6,7</b>
12	Sub-CLO	The Role of Beneficial	Online via SPOT or Google Classroom with discovery	100'	Quiz at the end of the meeting	<b>1,2,3,4,5,6,7,8,9</b>

	<p>Analyze the role of microorganisms in food</p> <p>Sub-CLO indicators: After completing this course, students are expected to be able to:</p> <ol style="list-style-type: none"> <li>1. Analyze beneficial microorganisms in food</li> <li>2. Analyze the factors to be considered in supporting the life of beneficial microorganisms</li> <li>3. Analyze adverse microorganisms in food</li> <li>4. Analyze the factors to be considered in preventing the proliferation of adverse microorganisms</li> </ol>	Microorganisms	model, question and answer method			
13	<p>Sub-CLO</p> <p>Evaluate the role of adverse Microorganisms</p>	The Role of Adverse Microorganisms	Online via SPOT or zoom meet or Google Classroom with discovery model, question and answer method	100'	Review food damage articles	<b>1,2,3,4,5,6,7,8,9,10,11</b>

	<p>Sub-CLO indicators: After completing this course, students are expected to be able to:</p> <p>1. Analyze adverse microorganisms in food properly</p> <p>2. Analyze the factors to be considered in preventing the proliferation of adverse microorganisms properly</p> <p>3. Implement ways to stop the growth of pathogenic microorganisms appropriately</p>					
14	<p>Sub-CLO</p> <p>Evaluate the role of fiber in food metabolism</p> <p>Sub-CLO Indicators</p> <p>After completing this course, students are expected to be able to:</p>	The Role of Fiber in Food Metabolism	Online via SPOT or Google Classroom with discovery model, question and answer method	100'	Review article on the role of fiber in food metabolism	<b>1,2,3,4,5,6,7,8,9,10,11</b>

	<p>1. Analyze the role of fiber in food metabolism</p> <p>2. Evaluate the role of fiber in food product development</p>					
15	<p>Sub-CLO</p> <p>Evaluate the role of science in culinary products</p> <p>Sub-CLO Indicators</p> <p>After completing this course, students are expected to be able to:</p> <p>1. Analyze the role of natural science in the manufacture and development of culinary products</p> <p>2. Evaluate the application of science in the manufacture and development of culinary products</p>	<p>Applied natural science in Culinary product development</p>	<p>Online via SPOT or zoom meet or Google Classroom with discovery model, question and answer method</p>	100'	<p>Review articles on the manufacture and development of culinary products by taking the principles of applied-natural science into account</p>	<p>1,2,3,4,5,6,7,8,9,10,11</p>
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## 6. References

1. Gisslen, W. (2011). *Professional Cooking. seventh edition*. United States of America : John Wiley & Sons, Inc.
2. Wijaya, D. 2011. Waspada! Zat Adiktif dalam Makananmu. Jakarta: Buku Biru.
3. Sopandi Tatang and Wardah. 2014. Mikrobiologi Pangan (Teori dan Praktik). Yogyakarta: Andi