

Module Course

	UNIVERSITAS JEMBER FACULTY OF AGRICULTURAL TECHNOLOGY DEPARTMENT OF AGRICULTURAL PRODUCT TECHNOLOGY		KODE DOKUMEN F1.03.05
Module Course			
COURSE	Name	Packaging and Storage Technology	
	Kode	TPP 1407	
	Credit (SKS)	2 SKS Face to Face	
	Semester	2	
Person(s) Teaching			
- Prof. Dr. Yuli Witono, S.TP., M.P. - Lailatul Azkiyah, S.TP., M.P., Ph.D.			
DESCRIPTION OF COURSE			
The packaging and storage technology course studies the basic concepts of packaging and storage, packaging techniques and storage, which includes the type of packaging, its shape and design, use and testing of packaging, packaging rules, systems labelling and equipment for packaging and storage. In addition, this course also studies techniques for calculating shelf life and food product expiry date.			
LO – Programme Learning Outcome			
<i>No LO</i>	<i>Statement of Learning Outcome (LO)</i>		
LO-1	Able to internalize the attitude of piety to God Almighty and love for the homeland		
LO-2	Able to demonstrate collaboration and scientific communication skills both orally and in writing at the level national and international		
LO-4	Able to design food products and agricultural products based on local agro-industry commodities		
Course Learning Outcome (CLO)			
<i>No CLO</i>	<i>Statement of CLO</i>		
CLO-1	Demonstrate an attitude of responsibility, honesty, and discipline as a manifestation of piety to God Almighty		
CLO-2	Demonstrate the ability to collaborate in completing work		
CLO-3	Students can understand the basic concepts of packaging and storage, packaging and storage techniques, including the type of packaging, its form and design, use and testing of packaging, packaging rules, systems labelling and equipment for packaging and storage of food products		
CLO-4	Students can design packaging and labels for a food product		
CLO-5	Students can understand the technique of calculating shelf life and expiration of food products		
SUB COURSE LEARNING OUTCOME (Sub-CLO)			
<i>No Sub-CLO</i>	<i>Statement of Sub-CLO</i>		
1	Students collect all assignments and carry out evaluations in a timely and honest manner		

2	Students can do Team Project Based Learning regarding product packaging and labelling food
3	Students can understand the basic concepts and interests of food product packaging
4	Students can understand the classification of food product packaging
5	Students can understand the active packaging technology of food products
6	Able to understand food product storage technology
7	Students can understand the technology of food product canning
8	Students can understand environmentally friendly packaging technology/ biodegradable packaging
9	Students can understand the distribution and display process of food products
10	Students can understand the labelling system and regulations for food product packaging
11	Students can design labels and packaging of food products
12	Students can understand the basic concepts and importance of the shelf life of food products
13	Students can understand the method of calculating the shelf life of food products
14	Students can measure the shelf life of food products using the thermal sorption method
15	Students can measure the shelf life of food products using the Arrhenius method
LEARNING TOPIC	
- Basic concepts of packaging and storage solubility (solvent and solute) - Types and characteristics of food product packagingSedimentation - Interaction of food and packagingCrystallization - Labeling system and regulation of food product packaging - Functional packaging model and design - Distribution of packaging and storage of food products - Prediction of shelf life and quality loss of food products	
MAIN REFERENCES	
1. Grumezescu AM, Holban AM. 2018. Food Packaging and Preservation Volume 9. Cambridge: Academic Press. 2. Paine FA, Paine HY. 1992. A Handbook of Food Packaging. 2nd edition. New York: Springer Science+Business Media. 3. Rahman MS. 1992. Handbook of Food Preservation. 2nd edition. Boca Raton: CRC Press. 4. World Health Organization, Food and Agriculture Organization of The United Nations. 2007. Food Labelling. Rome: WHO and FAO	
ADDITIONAL REFERENCES	
Other study materials related to packaging and storage	
PREREQUISITES COURSE (If any)	
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TIMELINE		
WEEK(s)	Components	Person(s)
1	Description, purpose, function, and role of packaging essential food products	Prof. Dr. Yuli Witono, S.TP., M.P.
2	Materials, specifications, and packaging from food products	Prof. Dr. Yuli Witono, S.TP., M.P.
3	Technology active packaging of food products	Prof. Dr. Yuli Witono, S.TP., M.P.
4	Technology storage of food products food	Prof. Dr. Yuli Witono, S.TP., M.P.
5	Filling technique, measuring dose, parameters, and essential factors during the process of product canning food	Prof. Dr. Yuli Witono, S.TP., M.P.
6	Description, features, types, and characteristics of friendly packaging environment	Prof. Dr. Yuli Witono, S.TP., M.P.
7	Distribution process and product display food	Prof. Dr. Yuli Witono, S.TP., M.P.
8	Functions, information, and codification labelling, as well as regulation in product packaging food	Prof. Dr. Yuli Witono, S.TP., M.P.
9	Design of product labels and packaging of food	Prof. Dr. Yuli Witono, S.TP., M.P.
10	Describe solutions and innovations to packaging and product labelling of food	Lailatul Azkiyah, S.TP., M.P., Ph.D.
11	Product packaging and labelling of food as well as food product canning	Lailatul Azkiyah, S.TP., M.P., Ph.D.
12	Basic concepts and the importance of the shelf life of food products	Lailatul Azkiyah, S.TP., M.P., Ph.D.
13	Calculation method shelf life of food products	Lailatul Azkiyah, S.TP., M.P., Ph.D.
14	Measuring shelf life of food products using the thermal sorption method	Lailatul Azkiyah, S.TP., M.P., Ph.D.
15	Measuring shelf life of food products using the Arrhenius method	Lailatul Azkiyah, S.TP., M.P., Ph.D.
16	Shelf Life food product	Lailatul Azkiyah, S.TP., M.P., Ph.D.

Jember, October 2022

Chief of Department

Person(s) coordinator

Dr. Triana Lindriati, S.T., M.P

Lailatul Azkiyah, S.TP., M.P., Ph.D.

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