

Module Course

	UNIVERSITAS JEMBER FACULTY OF AGRICULTURAL TECHNOLOGY DEPARTMENT OF AGRICULTURAL PRODUCT TECHNOLOGY		KODE DOKUMEN F1.03.05
Module Course			
COURSE	Name	Industrial Planning	
	Kode	TPU 1602	
	Credit (SKS)	3 SKS Face to Face; 1 SKS Practice	
	Semester	6	
Person(s) Teaching			
- Prof. Ir. Achmad Subagio, MAgr., PhD. - Dr. Triana Lindriati, S.T.,MP - Lailatul Azkiah, STp, Mp, PhD - Ardiyan Dwi Masahid, STp, MP.			
DESCRIPTION OF COURSE			
This course studies the procedures, calculations and preparation of food industry planning			
LO – Programme Learning Outcome			
<i>No LO</i>	<i>Statement of Learning Outcome (LO)</i>		
LO-4	Able to design food products and agricultural products based on local agro-industry commodities		
LO-6	Able to design agricultural food business models that can be applied		
LO-8	Able to evaluate principles in food engineering and agricultural products		
Course Learning Outcome (CLO)			
<i>No CLO</i>	<i>Statement of CLO</i>		
CLO-1	Designing process and food processing industry		
CLO-2	Conduct an economic/business feasibility study as a complete pre-planned food industry document		
CLO-3	Analyzing the principles of the food industry development stages		
SUB COURSE LEARNING OUTCOME (Sub-CLO)			
<i>No Sub-CLO</i>	<i>Statement of Sub-CLO</i>		
1	Students can design food processing processes in the form of blocks and flow diagrams		
2	Students can perform mass and heat balance calculations based on the block diagrams that are arranged		
3	Students can design equipment requirements and factory layouts		
4	Students can arrange the utility needs of the food industry		
5	Students can do industrial planning		
6	Students can prepare Capital Investment from industrial designs		
7	Students can perform cash flow calculations and economic analysis parameters		

8	Students can analyze the types of food products to be developed, the types of raw materials needed, the stages of the processes developed and the means that support the transformation of raw materials into products.	
LEARNING TOPIC		
- Aspects of product and raw material selection - Aspects of site selection and layout preparation - Technical aspects of industrial planning - Preparation of flow charts and industrial flow sheets - Economic analysis - Factory pre-plan documents		
MAIN REFERENCES		
- Zacharias B. Maroulis and George D. Saravacos, 2007. Food Plant Economic. CRC Pres - Antonio Lopez – Gomez and Gustavo V. Barbosa – Canovas, 2005. Food Plant Design. Taylor and Francis Group - Max S. Peters, Klaus D. Timmerhaus, Ronald E. West, 2003. Plant Design and Economic for Chemical Engineer. Mc Graw Hill		
ADDITIONAL REFERENCES		
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PREREQUISITES COURSE (If any)		
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TIMELINE		
WEEK(s)	Components	Person(s)
1	Food industry trends and stages of Industrial planning	Prof. Ir. Achmad Subagio, MAgr., PhD.
2	Principles of product selection to be developed in the food industry	Prof. Ir. Achmad Subagio, MAgr., PhD.
3	Principles of selecting raw materials to be developed in the food industry	Prof. Ir. Achmad Subagio, MAgr., PhD.
4	Food industry location principles	Prof. Ir. Achmad Subagio, MAgr., PhD.
5	Principles of making block diagrams Practicum drawing block diagrams with Aspen Hysys and Visio software	Lailatul Azkiah, STp, Mp, PhD
6	Principles of making flow diagrams Practicum in drawing flow diagrams with Aspen Hysys and Visio software	Lailatul Azkiah, STp, Mp, PhD
7	Principles of selecting industrial machinery and equipment	Lailatul Azkiah, STp, Mp, PhD
8	Principles of selecting industrial machinery and equipment	Lailatul Azkiah, STp, Mp, PhD
9	Mass and heat balance	Ardiyan Dwi Masahid, STp, MP.

10	Utilities in the food industry	Ardiyan Dwi Masahid, STp, MP.
11	Fixed capital investment	Dr. Triana Lindriati, S.T.,MP
12	Working capital investment	Dr. Triana Lindriati, S.T.,MP
13	Make cash flow	Dr. Triana Lindriati, S.T.,MP
14	Doing economic analysis	Dr. Triana Lindriati, S.T.,MP
15	Industrial Visit	Seluruh team
16	Industrial Visit	Seluruh team

Jember, October 2022

Chief of Department

Person(s) coordinator

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