



BACHELOR IN FOOD & AGRICULTURAL PRODUCT TECHNOLOGY

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MODULE HANDBOOK

POST-HARVEST PHYSIOLOGY AND TECHNOLOGY

Module designation	Post-Harvest Physiology and Technology
Module code	TPHP213211
Module level	Bachelor
Semester(s) in which the module is taught	Semester 6 / Even Semester
Person responsible for the module	Dr.nat. tech. Andriati Ningrum, S.T.P., M.Agr. Prof. Dr. Ir. Djagal Wiseso Marseno, M.Agr. Intan Dewi Larasati, S.T.P., M.Sc.
Language	Indonesian
Relation to curriculum	Elective Courses
Teaching methods	Presentation, discussion (Case-Based)
Workload (incl. contact hours, self-study hours)	1. Lectures 2 credits x 50 minutes x 16 meetings = 1600 minutes = 26.67 hours = 26.67 hours/30 hours = 0.89 ECTS 2. Structured Assignments 2 credits x 60 minutes x 16 meetings = 1920 minutes = 32 hours = 32 hours/30 hours = 1.07 ECTS 3. Self-study 2 credits x 60 minutes x 16 meetings = 1920 minutes = 32 hours = 32 hours/30 hours = 1.07 ECTS Total workload = 3.03 ECTS (90.67 hours)
Credit points	2 credits / 3.03 ECTS



Required and recommended prerequisites for joining the module	No requirement needed			
Module objectives/intended learning outcomes	Programme Learning Outcome (PLO)			
	PLO P1	Be able to explain the structure and properties of food components / agricultural products (carbohydrates, proteins, lipids, water, other components, and food additives) and chemical changes that occur during processing		
	Module Learning Outcome (MLO)			
	MLO P1.2	Be able to explain the chemical events that underlie the reactions of various food components		
Content	1. Introduction of physiology and post-harvest technology and the lecturers 2. The role of physiology and post-harvest technology that is appropriate to maintain the quality of horticultural products 3. The basis of post-harvest handling of horticultural products: ethylene biosynthesis and gas exchange of horticultural products 4. Physiological basis of post-harvest handling: respiration & transpiration; chemical and physical aspects of post-harvest handling 5. Development: Growth, Harvesting, Maturation, Ripening, Aging, and Decay; Harvest Losses, Biological Aspects of Horticultural Post-harvest Handling 6. Physiological basis of post-harvest handling: ripening adjustments and low-temperature storage. 7. Packing House, controlled air storage (MAS, CAS) 8. Horticultural products marketing 9. The latest topics that are relevant to physiology and post-harvest horticultural products technology			
Examination forms	Evaluation Base	Evaluation Components	MLO	Percentage
	A. Participatory Activities	Discussion	-	-
	B. Case Study Results	Presentation	MLO P1.2	20%
		Report	MLO P1.2	30%
		Midterm Exam	MLO P1.2	5%
		Final Exam	MLO P1.2	5%
	C. Cognitive	Skill-Based Assessment (SBA)	-	-
		Quiz	-	-
		Midterm Exam	MLO P1.2	20%



		Final Exam	MLO P1.2	20%
		Total		100%
Study and examination requirements	The final grade in the module is composed of (60% project results and 40% cognitive). Students must attend 75% of the total meetings to take the exam.			
Reading list	Main: 1. Both R. H. and Shaw, R.L. 1981. Principles of Potato Storage International Potato Centre (CIP), Lima 2. Chakravert, A. 2001. Postharvest Technology. Science Publisher, Inc. 3. Hindenburg, R.E., Watada, A.E. and Wang, C.Y. 1986. The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks USDA Handbook No. 66 (revised) 4. Kader, A.A., Kashmir, R.F., Mitchell, F.G., Reid, M.S., Sommer, N.F. and Thompson, J.F. 1985. Postharvest Technology of Horticultural Crops, University of California, Berkeley. 5. Pantastico, ER.B. 1989. Fisiologi Pascapanen (terjemahan Prof. Ir. Kamarijani). Gadjah Mada University Press. 6. Paliyath et al., 2008. Postharvest Biology and Technology of Fruits, Vegetables, and Flowers. Wiley-Blackwell Publishing 7. Weichmann, J. 1987. Postharvest Physiology of Vegetables. Marcel Dekker, Inc., New York 8. Wills, R.H.H., Lee, T.H., Graham, D., McGlasson, W.B. and Hall, E.G. 1981. Postharvest, An Introduction to the Physiology and Handling of Fruit and Vegetables, New South Wales University Press, P.O. Kensington, NSW. 9. Journal: Journal of Agricultural and Food Chemistry, Food Chemistry, Journal of Food Science, Food Technology			
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