Universitas Gadjah Mada

Faculty of Agriculture
Agronomy Study Program

Course Syllabus

Course Code	Course Name	Credits	Semester	Course Status	Requirement
PNA 1203	Ecosystem in Agriculture	3	2nd	Compulsory	-

Learning Outcome	1	Able to explain the theoretical concepts of plant biology, plant cultivation, and plant production technology, factors that affect plant growth (planting material, soil and water, climate, plant pests), in oral or written form by paying attention to socio-humanities aspects.
	2	Able to think scientifically in problem solving and decision making in agriculture related to crop physiology.
	3	Able to demonstrate in-depth theoretical concepts of science and technology related to the provision of planting material through plant breeding, physiology and ecology, crop production management, and factors that affect yields and quality of yields and post-harvest in sustainable crop production systems and smart agriculture by applying the rules of good agriculture practices (GAP).
Course Description	This course studies the interactions between organisms and the biotic and abiotic environment.	
Course Content	1. Introduction, the concept of ecology (the history of developments that have occurred, ecological relationships with other sciences and ecological classifications). 2. Concept of ecosystem (ecosystem constituents and their relationships with each other) 3. Concepts of energy flow, material cycle and ecosystem classification based on its energy. 4. Concept of Biogeochemical cycles (explain to the various biogeochemical cycles and disturbances that occur in the cycle) 5. Concept of succession (type of succession based on the process of its emergence, the kind of succession is based on the place where it occurs and the stage in succession). 6. The definition of limiting factors (laws about limiting factors, legal requirements limiting factors, for example, limiting factors and limiting factor interactions). 7. The definition of the population and the characteristics of the existing population characteristics.	
Reference	1. Barbour, Burk , Pitts. 1987. Terrestrial Plant Ecology. 2nd ed. The Benjamin /Cummings Publishing Comp. Inc. California. 2. Kupchella, C.E., Hyland, M.C. 1986. Environmental Science, Living Within the System of Nature. Prentice-Hall international Ed. New Jersey. 3. Lambers, H, Chapin, F.S., Pons, T.L., 1997. Plant Physiological Ecology. Springer. New York.	

	4. Odum, E.P. 1994. 3rd ed. Basic Ecology. Holt-Saunders International, Japan. 5. Stiling, P.D. 1992. Introductory Ecology. Prentice-Hall International Ed.
Lecturer	Ir. Sri Muhartini, M.S. Ir. Budiastuti Kurniasih, M.Sc., Ph.D. Siti Nurul Rofiqo Irwan, S.P., M.Agr., Ph.D. Widhi Dyah Sawitri, S.P., M.Agr., Ph.D. Valentina Dwi Suci Handayani, S.P., M.Sc., Ph.D. Taufan Alam, S.P., M.Sc.