

Module Name	Plant Physiology
Module Level, if applicable	Beginner
Code if Applicable	0210200667
Subtitle, if applicable	-
Courses, if applicable	0210200667 (Plant Physiology)
Semester(s) in which the module is taught	2
Person responsible for the module	Dr. Ir. Muhidin, MSi
Lecturer	Dr. Ir. Muhidin, MSi
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in Department of Agrotechnology, Faculty of Agriculture and Animal Science.
Type of teaching, contact hours	Lecture, Project, Independent Learning, Lab Work
Workload	<ul style="list-style-type: none"> ● Lecture : 2 sks × 50 minutes × 16 weeks ● Project : 2 sks × 60 minutes × 16 weeks ● Independent Learning 2 sks × 60 minutes × 16 weeks ● Lab Work: 1 sks × 170 minutes × 16 weeks
Credit points	SKS 3 SCH × (1.5) = 4.5 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	No prerequisites
Module Objectives (Intended learning outcomes)	On successful completion in this course, student should be able to: <ul style="list-style-type: none"> ● Explaining the Scope, Concept & Importance of Plant Physiology ● Explain and study the characteristics and functions of water for plant growth ● Explain and study evapotranspiration ● Explain and study the concepts of photosynthesis and respiration in plant cells
Module Content	This course presents material and basic concepts as well as theories on the Characteristics and Functions of Water, Diffusion and Osmosis Systems, Water Absorption, Nutrient Uptake Mechanisms, Evapotranspiration, Cell System Organization, Cell Compounds, Phytohormones, Basic Concepts of Photosynthesis, Photosynthesis C3, C4, CAM, Cell Respiration, Plant Growth, Plant Development.
Study and examination requirements and forms of examination	Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice

	Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Recommended Literature	<p>For Class</p> <p>A. Compulsory</p> <ul style="list-style-type: none"> - Muhidin, 2004, Modul FISILOGI TUMBUHAN, Department of AGROTECHNOLOGY, Universitas Muhammadiyah Malang. - Muhidin. 2017, Petunjuk Praktikum FISILOGI TUMBUHAN, Laboratorium Agrotechnology FPP, Universitas Muhammadiyah Malang <p>B. Option</p> <ul style="list-style-type: none"> - Abidin Z. 1993. Dasar-dasar Pengetahuan Tentang Zat Pengatur Tumbuh. Angkasa. Bandung. - Bidwell, R. G. S. 1979. Plant Physiology, Second Edition. Collier McMillan international Editions. Page 192-199. - Champbell, R.M, 2002. Biologi. Erlangga. Jakarta - Gardner F. P., Pearce, R. B. Dan Mitchell, R. L. 1985. Physiology of Crop Plant. The Iowa State University Press. - Glass, A. D. M. 1989. Plant Nutrition An Introduction to Current Consept. The University of British Columbia. Jones and Bartlett Publishers Boston/Portola Valley. - Harran, S. 1987. Dasar-Dasar Fisiologi dan Nutrisi Tanaman. IPB. Bogor. - Heddy, 1989. Hormon Tumbuh. Rajawali. Jakarta. - Lakitan, B. 2004. Dasar-Dasar Fisiologi Tumbuhan. Raja Grafindo Persada. Jakarta. - Idayah, S., Muhidin, Elfi, S.A., Noor,H. 1995. Fisiologi Lanjutan dan Nutrisi. Department of Agriculture Cultivation. Faculty of Agriculture UMM. Malang. - Marschner, H. 1986. Mineral Nutrion in Higher Plant . Academic Press Inc. London LTD. - Salisbury, 1992, Fisiologi Tumbuhan vol 3, Publisher by ITB, Bandung
Date of Last Amendment	22 nd August 2022