THE MODULE HANDBOOK
DOCTOR BIOLOGY STUDY PROGRAM
FACULTY OF BIOLOGY

SELECTED TOPIC FOR DISSERTATIONS

Plant Physiology

Course code	BIDB203196
Course level	Doctoral Program
Semester/ term	Odd/even
Course coordinator	Prof. Dr. Diah Rachmawati, S.Si., M.Si.
Lecture(s)	Prof. Dr. Diah Rachmawati, S.Si., M.Si. Dr. Tri Rini Nuringtyas, S.Si., M.Sc.
Language	Indonesian/English
Classification within the Curriculum	Compulsory
Teaching format/ class hours per week during the semester	This course is planned to have 14 teaching weeks and 2 weeks of examination.
Workload	90 hours
Credits	2-0 credits / 3.6 ECTS
Requirements	Receiving approval from the Supervisory Team.
Program Learning Outcome	CPL 3.1. After completing this program, the graduates will be able to discover or develop new scientific theories/concepts/ideas in biology
Course Learning Outcome	BIDB203196.1 By the end of this course, students will be able to study and analyze the cellular and molecular mechanisms of primary and secondary metabolite biosynthesis in plants and their roles in plant growth. BIDB203196.2 By the end of this course, students will be able to integrate and evaluate information related to primary and secondary metabolites in plant development from various sources.
Course Description	This course examines plant growth processes and the cellular and molecular mechanisms underlying each phase of plant development. The topics include primary metabolism related to the synthesis, accumulation, allocation, and partitioning of metabolites and the influencing factors, plant productivity, as well as the biosynthesis and functions of secondary metabolites in plants. It also explores the interaction between internal and environmental factors on the biosynthesis of primary and secondary metabolites. By the end of the course, students will be able to analyze and address

	issues related to the production of primary and secondary metabolites and their roles in plant growth.
Assessments	The assessment for Selected Topic for Dissertations (Plant Physiology) is based on two main components, with the respective criteria and weights: A. Participatory Activity (20%) • Participation (20%) B. Project (80%) • Project Result/Case Study/Project Based Learning result (80%)
Study Media and Literature	1. Bhatla, S.C. & Lal, M.A. 2018. Plant Physiology, Development and Metabolism. Springer. Singapore. 2. Davies, P.J. 2010 Plant Hormone. Biosynthesis, Signal Transduction, Action. Revised 3rd Edition. SpringerDordrecht Heidelberg Londorn New York. 3. Lambers, H., F.S. Chapin III, T.L. Pons. 2008. Plant Physiological Ecology. Springer-Verlag New York, Inc. 4. Marschner, P. 2012. Mineral nutrition of higher plants. Third Edition. Acad Press, London 5. Carocho, M., Heleno, S.A., Barros, L. 2023 Natural Secondary Metabolites. Springer, Cham 6. Westhoff, P. 1998. Molecular plant development from gene to plant. Oxford University Press. 7. Taiz, L. and E. Zieger. 2015. Plant Physiology 5th Ed. Sinauer Associates, Inc., Publisher. Sunderland, Massachusetts.