THE MODULE HANDBOOK
DOCTOR BIOLOGY STUDY PROGRAM
FACULTY OF BIOLOGY

SELECTED TOPIC FOR DISSERTATIONS

Plant Hormone Biosynthesis

Course code	BIDB203161
Course level	Doctoral Program
Semester/ term	Odd/even
Course coordinator	Prof. Dr. Kumala Dewi, M.Sc.St
Lecture(s)	Prof. Dr. Kumala Dewi, M.Sc.St
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 1.1. Upon completing this program, the graduates demonstrate an attitude of being able to contribute to improving the quality of life in society, nation and state, and the progress of civilization based on Pancasila. CPL 1.3. Upon completing this program, the graduates demonstrate an attitude of being able to internalize academic values, norms and ethic CPL 2.3. After attending this program, graduates demonstrate an understanding of new concepts in the fields of biology and applied biology CPL 4.3 After participating in this program, graduates will be able to apply the philosophy of biological systems in developing biological concepts in the areas of food, health, bioenergy, biomaterial and/or the environment
Course Learning Outcome	BIDB203161.1 By the end of this course, students will understand the fundamental aspects of classical and novel phytohormones, plant growth regulators, and their applications in agriculture. They will be able to explain the physiological functions and mechanisms of various plant hormones and analyze their individual and interactive effects on plant growth

	BIDB203161.2 By the end of this course, students will understand of regulatory mechanisms gained by students will be useful in achieving or promoting optimal plant growth under various conditions, including normal and stress environments, as well as enhancing productivity—especially in cultivated plants valuable for food, feed, natural dyes, health, and other uses. BIDB203161.3 By the end of this course, students will be able to prepare a dissertation research proposal
Course Description	This course provides fundamental knowledge on various aspects of phytohormones, including classical and newly discovered phytohormones, plant growth regulators, and their applications in agriculture. It covers the physiological functions and mechanisms of different plant hormones, as well as their effects on plant growth, both individually and through hormone interactions. Students will also learn quantitative methods for phytohormone analysis and molecular techniques to study gene expression involved in hormone biosynthesis and action during plant growth and development. The understanding of hormone regulation gained will help students promote optimal plant growth under normal and stress conditions, leading to higher productivity, especially in cultivated plants important for food, feed, natural dyes, health, and other uses.
Assessments	The assessment for Selected Topic for Dissertations (Plant Hormone Biosynthesis) is based on three main components, with the respective criteria and weights: A. Participatory Activity (6%) • Stuctured Assigment/Task (6%) B. Project (19%) • Stuctured Assigment/Task (9%) • Project Result/Case Study/Project Based Learning result (10%) C. Kognitif/Knowledge (75%) • Stuctured Assigment/Task (15%) • Quiz (10%) • Mid-Term Exam (25%) • Final-Term Exam (25%)
Study Media and Literature	1. Taiz, L. & Ziegler, 1998. Plant Physiology. Sinauer Associates, Inc. Publishers, Sunderland, Massachusetts. Publishing Company, Belmont, California. Chapter 17 and 18. 2. Salisbury, F.B. and C.W. Ross. 1994. Plant Physiology. Fourth Edition. Wadsworth 3. Fosket, D.E. 1994. Plant Growth and Development. A Molecular Approach. Academic Press INC., San Diego, California.

4. Davies, P.J. 2006. Plant Hormones. Biochemistry, Signal Transduction and Action!. Kluwer Academic Publishers. Dordrecht. Boston, London.
5. Davies, P.J. 1995. Plant Hormones. Physiology, Biochemistry and Molecular Biology. Kluwer Academic Publishers. Dordrecht. Boston, London.