MODULE HANDBOOK

	UNIVERSITAS PADJADJARAN **FACULTY OF MATHEMATICS AND NATURAL SCIENCES** **BACHELOR OF BIOLOGY PROGRAMME**	**COURSE CODE :** **D10D-4004**
Module designation	Practicum of Plant Physiology	
Semester in which the module is taught	4	
Persons responsible for the module	1. Dr. Mohamad Nurzaman, M.Si 2. Dr. Tia Setiawati, M.Si 3. Drs. Ruly Budiono, MS, Ph.D 4. Rusdi, Ph.D 5. Dr. Asep Zainal Mutaqin, M.T.	
Medium of instruction	Indonesian	
Relation to curriculum	Compulsory Course	
Teaching methods	Practice, Project-based Learning, Collaborative Learning	
Workload	Total workload : 2720 minute = 45.33 hour Practice : 1 x 170 minute x 16 week = 2720 minute = 45.33 hour Exercises : - Self-study : -	
Credit points	1.00 (1.81 ECTS)	
Required and recommended prerequisites for joining the module	-	
Module objectives/intended learning outcomes	1. Students are able to explain the objectives, scope, and rules for conducting plant physiology laboratory work C2. 2. Students are able to apply simple plant physiological observation methods C3 3. Students are able to apply tissue water potential measurement techniques C3 4. Students are able to apply techniques for identifying symptoms of nutrient deficiency in plants C3 5. Students are able to apply techniques for measuring photosynthesis and respiration rates C3 6. Students are able to apply hormone application techniques to modify plant growth C3. 7. Students are able to apply experiments to observe plant movement responses to stimuli C3. 8. Students are able to apply simple extraction techniques to isolate secondary metabolites C3. 9. Students are able to analyze the relationship between plant physiology and biotechnology development.	
Contents	1. Course Contract and Introduction 2. Fundamentals and scope of plant physiology 3. The relationship between water and plants 4. The role of macro and micro nutrients 5. Metabolism in plants (photosynthesis and respiration) 6. Hormones (auxin, cytokinin, gibberellin, ethylene, and ABA) 7. Movement in plants	

	8. Secondary metabolites 9. Relationship between plant physiology and plant biotechnology
Examination forms	Quiz, Midterm exam, Assignment, and Final exam
Study and examination requirements	The minimum attendance in lectures is 100%. Final grades are evaluated based on quiz (25%), midterm exam (25%), assignment (25%), and final exam (25%)
Reading lists	1. Djiwoseputro, D. 1994. Pengantar Fisiologi Tumbuhan. Cetakan ketiga belas. Jakarta: PT Gramedia Pustaka Utama 2. Lakitan, B. 2010. Dasar-dasar Fisiologi Tumbuhan. Ed I cetakan 8. Jakarta: Rajawali Pers 3. Salisbury, F. B. & C. W. Ross. 1995. Fisiologi Tumbuhan. Diterjemahkan oleh D. R. Lukman & Sumaryono. Bandung: ITB 4. Taiz, L. and Z. Eduardo. 1992. Plant Physiology. New York: The Benyamin Cumming Publishing Company. Inc. 5. Taiz, L., & Zeiger, E. (2015). Plant physiology and development (6th ed.). Sinauer Associates.