


MODULE HANDBOOK

	UNIVERSITAS PADJADJARAN FACULTY OF MATHEMATICS AND NATURAL SCIENCES BACHELOR OF BIOLOGY PROGRAMME	COURSE CODE : D10D-50604
Module designation	Plant Biotechnology	
Semester in which the module is taught	5	
Persons responsible for the module	1. Dr. Mohamad Nurzaman, M.Si 2. Dr. Tia Setiawati, M.Si 3. Drs. Ruly Budiono, M.Sc. 4. Asep Zainal Mutaqin, M.Si.	
Medium of instruction	Indonesian	
Relation to curriculum	Compulsory Course	
Teaching methods	Student-Centered Learning, Project-based Learning, Collaborative Learning	
Workload	Total workload : 5440 minutes = 90.67 hours Lectures, discussions, and collaborative learning : 2 x 50 minutes x 16 weeks = 1600 minutes = 13.33 hours Exercises : 2 x 60 minutes x 16 weeks = 1920 minutes = 32 hours Self-study : 2 x 60 minutes x 16 weeks = 1920 minutes = 32 hours	
Credit points	2.00 (3.62 ECTS)	
Required and recommended prerequisites for joining the module	Plants Structure and Development 2 and Plant Physiology	
Module objectives/intended learning outcomes	1. Able to explain the scope and basic principles of plant biotechnology 2. Able to explain the stages of micropropagation, induced multiplication, rooting, and acclimatization 3. Able to identify tissue culture media according to the needs of specific plant types 4. Able to compare the advantages and disadvantages of various types of in vitro cultures 5. Able to analyze the physicochemical factors that influence the increase in secondary metabolites in plant in vitro cultures 6. Able to evaluate regulations and policies related to the release of transgenic plants in a country	
Contents	1. Basic concepts of plant biotechnology 2. Micropropagation techniques 3. Aseptic techniques and basic tissue culture media 4. Types of in vitro cultures and their applications 5. In vitro production of secondary metabolites 6. Transgenic plants	
Examination forms	Quiz, Midterm exam, Activities, Worksheet Reports, and Final exam	

Study and examination requirements	The minimum attendance in lectures is 80%. Final grades are evaluated based on quiz (10%), midterm exam (15%), assignment (10%), final exam (15%), project and participation (50%)
Reading lists	<ol style="list-style-type: none">1. Park, S. 2021. Plant Tissue Culture Techniques and Experiments 4th Edition. Elsevier.2. Timir Baran Dja & Biswajit Ghosh. 2005. Plant Tissue Culture : Basic and Applied. Universities Press3. Chawla. HS. 2018. Introduction to Plant Botechnology. CRC Press.4. Agnès Ricroch, Surinder Chopra, Marcel Kuntz. 2002. Plant Biotechnology: Experience and Future Prospects. Springer.